WEEDS TREES and TURF

JANUARY 1973

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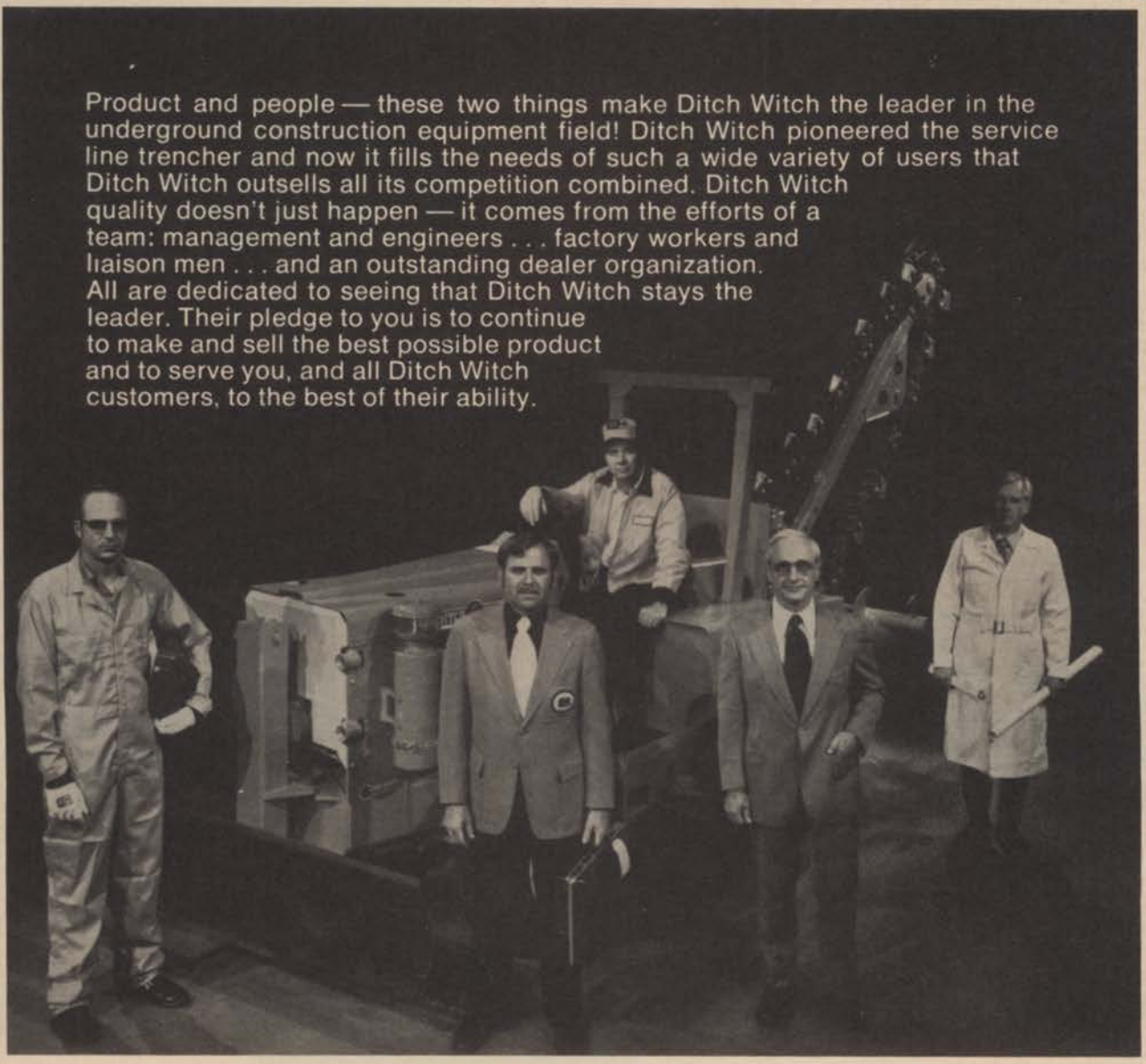

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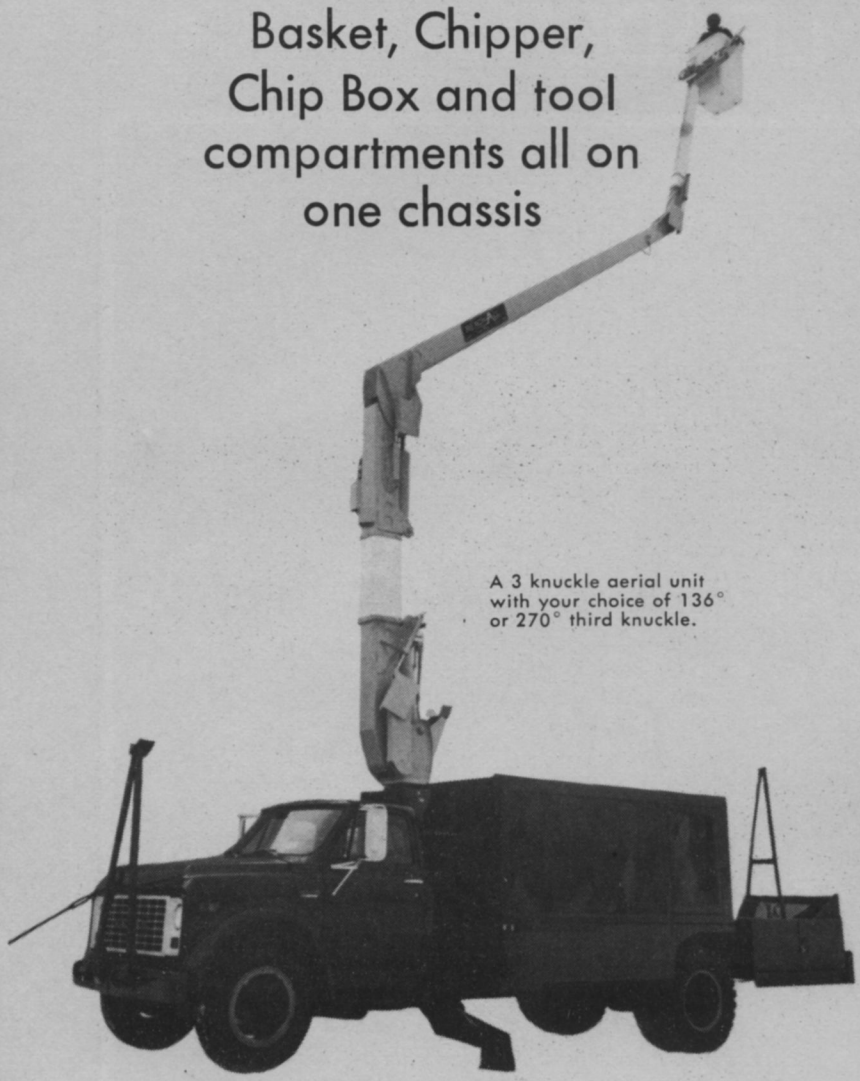

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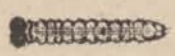

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WEEDS TREES and TURF®

Volume 12, No. 1 January, 1973

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Turf Management — Products, Budgets & Philosophy 14
Tony Caranci, well-known in New England as the superintendent's professional, talks turf management for superintendents. He tackles each facet of course upkeep with assurance and aggressiveness. Today's superintendent can benefit greatly from his time-proven experience.

Iron For Turfgrass 16
The objective in turfgrass production is one of producing chlorophyll. While iron is not a constituent of chlorophyll, it is essential in the chlorophyll-producing mechanism. Albert E. Ludwick, extension assistant professor, soil, Colorado State University discusses the need for iron in turfgrass maintenance.

These Managers Whipped Weevil Worries 18
Poa annua bluegrass may be a weed to most superintendents, but on Long Island, N.Y. it makes an acceptable turfgrass. That is, until the hyperodes weevil shows up. Learn how two superintendents keep weevil populations in check with Diazinon.

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Richard Hurley, University of Rhode Island, tells how Kingstown Velvet Bentgrass can make your greens fit for a king to play on.

1973 Golf Outlook 22
Here's an annual report on the state of the golf industry. Author, Harry Eckhoff, east coast facility development consultant, National Golf Foundation, predicts another great year of growth in this dynamic area.

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Nematodes — Could Your Turf Be Their Home 28
When turfgrass does not respond as it should to established and proven maintenance procedures, don't overlook nematodes as the cause of the problem. Bill Haven, a West Virginia superintendent, has lived through this problem. He found the solution in Dasanit.

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The Cover

Here's a familiar scene. And it won't be long until nearly every superintendent will be spraying his course for Poa annua, crabgrass and other undesirables. Our cover for January features the Oakland Hills Country Club, headquarters for the 54th PGA Championship. Superintendent Ted Woehrle keeps a year-round vigil on his course to make sure it is in top condition.

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HERCULES

TURF NOTES

SPRING 1973

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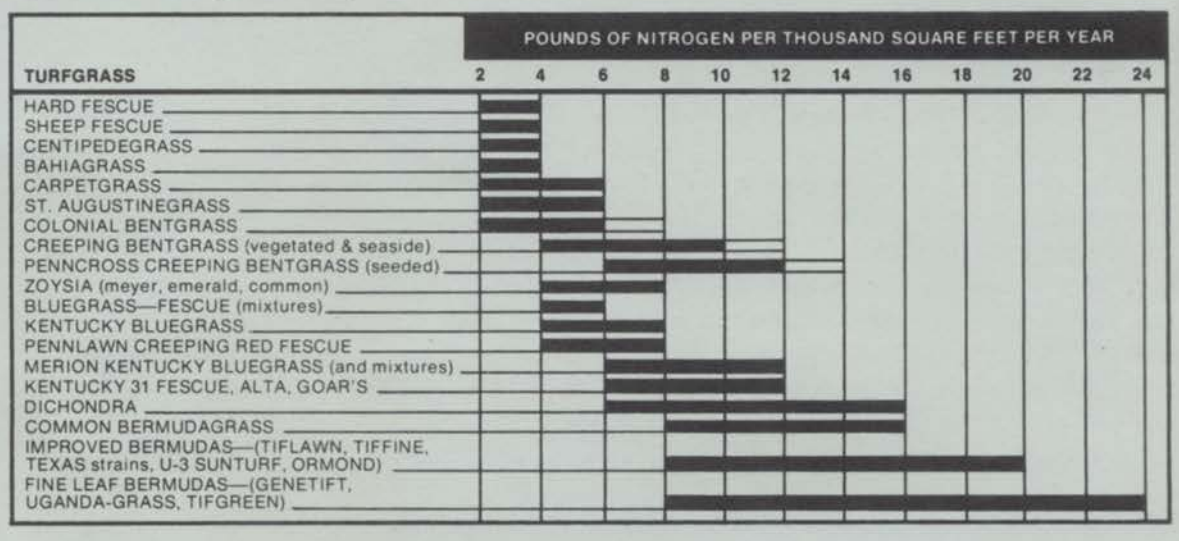

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CHECK THE TABLE TO SEE HOW MUCH NITROGEN YOUR TURF NEEDS.

The most common types of turfgrass are listed in the table, along with pounds of nitrogen required per year to keep them in top-quality condition.

To determine the pounds of Nitroform required to supply the annual nitrogen requirements above one pound per year, multiply the pounds of nitrogen needed as given in the table by the factor 2.6.

For the specific Nitroform program recommended for your climate, use the return postcard to request the edition of Turf Notes Number 101 for your section of the country.

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STH 73-2

Editorial Applicator's Dilemma

"Mother, may I go down to swim? Yes, my darling daughter. Hang your clothes on a hickory limb, but don't go near the water!"

This old childhood poem has been exhumed because the applicator of environmental protection chemicals is in a similar plight. Never before has he had so much and yet so little.

The positive facts speak for themselves. Thirty-eight states currently enforce the licensing of applicators through various applicator use laws. Several other states require permits or registration within the state. The Federal Environmental Pesticide Control Act of 1972 has become law. The organized voice of the applicator, the International Pesticide Applicators Association, Inc., has pledged a more active role in meeting both interior and exterior goals.

However, one negative fact indigenous to the state use laws appears to stifle most any attempt to perpetuate the importance of today's applicator in improving the environment. Currently, only three states authorize the training of applicators as a part of the administration of the state application and use law. While we do not know that training is actually being accomplished, Colorado, Oregon and South Dakota have at least made provisions in the law to conduct courses for applicators. Another notable exception is Nebraska. The state legislature recently passed a resolution to expand at the local level the educational program in the use of chemicals by farmers and ranchers. Hopefully this would also include professional applicators.

We submit that training is a function of education, a process as old as mankind. It is appalling, therefore, to discover that 46 states have taken the attitude of "don't pay any attention to it and maybe it will go away."

Unless you are skilled in the application of chemicals, most candidates for license may never get one. We recently asked several applicators how they obtained their license. One said he kept taking the exam until he passed it. Another mentioned something about picking the brain of a licensed professional. A third said he applied chemicals on the farm in a state that exempted farmers from license. He noted that there really wasn't much similarity between applying chemicals from a tractor seat and spraying a yard bordered by valuable shrubs.

We believe that licensing and training must be a joint venture. The Federal Environmental Pesticide Control Act has provisions for training which will be implemented with the various states. But this may take several years to become fully operational. We would suggest, as a interim, that each

(continued on page 43)

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Government News / Business

New environmental laws that saw legislative action in 1972 will have impact on your business in 1973. Three Acts which fill EPA Administrator William D. Ruckelshaus' quiver with barbed arrows include: The Federal Noise Control and Abatement Act of 1972, The Federal Water Pollution Control Act Amendments of 1972, and The Federal Environmental Pesticide Control Act of 1972.

The Federal Trade Commission has taken issue with three manufacturers of environmental protection chemicals (EPC) for deceptive or unfair safety claims in the advertising of their products. It charges that advertising for an EPC is deceptive unless the manufacturer includes warnings that appear on the label. FTC will also buy the statement, "This product can be injurious to health. Read the entire label carefully and use only as directed." FTC's position is that any product which contains the skull and crossbones on the label must also have the skull and crossbones on all advertising.

If you do EDITH like I do EDITH, the world would be a safer place. Exit Drills In The Home (EDITH) could reduce the number of deaths from fires drastically. Check your home for secondary escape routes, escape ladders from second floors and smoke detectors. Drills should be practiced until each person is capable of exiting safely.

Several cities around the country have been slapped with a building moratorium in an effort to solve waste disposal problems. The crisis is particularly evident in Florida. But research underway points strongly to the feasibility of discharging treated effluent over farmland through a sprinkler irrigation system. The effect is that plants and other vegetation absorb the nutrients. Animals feeding on the plants thereby complete the nutrient cycle.

David T. McLaughlin, president of The Toro Company, has charged that service is industry's most neglected aspect of management. Speaking before the National Association of Service Managers, he placed part of the blame on his audience for not presenting their case more aggressively and persuasively to management. The consumerism movement has dramatized management's "blind spot" towards service, he said. Some think consumerism is a fad that will go away. "It's not," he declared. "It's inevitable, enduring and, to a large extent, a creature of our own making." He offered four principles as a guide: make service everyone's business; make service profitable, as a marketing tool in a positive sense; and give to service its deserved recognition as a profession.

Chemical ecology is receiving more than just a little attention. A non-profit organization called Terra Society has been formed to fill the need of the scientific community, the media and the general public for a comprehensive and and authoritative source of information in the broad area of chemicals and their effects on the environment. The two key functions of the organization are research and development, and education and dissemination of information. Of particular interest to the "green industry" is the available information on pest control to specialists in the areas of public health, agriculture, environmental sciences and other professionals. If you need information, contact the Society at P. O. Box 110, Mt. Prospect, Illinois 60056.

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For complete information on this program and a supply of TERSAN turf fungicides, contact your golf course supplier.

With any chemical, follow labeling instructions and warnings carefully.

DU PONT

TERSAN 1·2·3 DISEASE CONTROL PROGRAM

New England's Tony Caranci

Turf Management — Products Budgets & Philosophy

THERE'S NOTHING MAGIC about managing a golf course. It's just like any business where the executive is responsible for a million dollars of real estate which has to be programmed for the pleasure and relaxation of a large group of people. It's a matter of evaluation, planning, execution, and follow-through," according to Anthony B. Caranci, the golf superintendent at Ledgemont Country Club, Seekonk, Massachusetts.

Tony Caranci should know. He grew up in a family of golf superintendents and completed the Agronomy and Turf Managers course at the University of Massachusetts. His late father was Anthony B. Caranci, Sr., the golf course superintendent at Louisquisett Golf Course and Valley Ledgemont Country Club. His brother is Thomas A. Caranci — well known on the West Coast and currently superintendent at Oahu Country Club in Hawaii. Tony took over the Ledgemont Country Club seventeen years ago, after several years at Louisquisett.

The Ledgemont golf course was about six years old when Tony arrived. "Its problems were just beginning to show up," reports Tony.

"I realized that as I presented my annual maintenance budget, I had to present my Long-Term Grounds Maintenance Program. The two were inter-related. Each year planning and budgeting had to take care of a portion of the over-all goals."

Listening to Tony, one soon grasps that the biggest problem he faced was water. There was either too much on the surface or not enough to irrigate.

To solve the problems of too much water, twelve holes have been reconstructed to improve the drainage, and this reconstruction program still continues on an annual basis. "Turfgrass is very sensitive to wet feet as well as to drought."

Tony's ingenuity was needed to solve the drought problem. When the local water shortage limited irrigation, Tony moved water from a nearby gravel pit, over the natural land contour, to keep the irrigation system going and the grass alive. The long-range problem has been solved by constructing two lakes on the course. Now, water can be pumped from a newly installed well about one-quarter mile away or from the golf course. The water is held in the lakes for use in the irrigation system when needed.

This good water management has also improved the ecology of the area. The club cannot dig wells on its own ground, because the town of Seekonk draws its water supply from wells on the golf course. Now, with adequate lake reservoirs the irrigation system can run at optimum, and water is actually being returned to the land.

"Since the name of the game is putting the first concern of the golf course manager is the putting surface," Tony comments.

The turfgrass choice was Vesper velvet bent. And "to make the greens an even better test of golf" Tony designed contours into the surface as greens were reconstructed to improve drainage. Hazards were also brought into play. "As the sand traps were refaced they were no longer left hidden but contoured into the landscape.

"Landscaping is important to the aesthetics as well as the play pattern," says Tony. So, annually trees, both evergreen and deciduous, are

(continued on page 36)

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Experimental variety of Kentucky bluegrass (left) is tolerant to low iron availability compared to a common non-tolerant variety (right). Note mottled appearance of grass on right caused by iron deficiency.

Iron For Turfgrass

By ALBERT E. LUDWICK
Extension Assistant
Professor, Soils
Colorado State University

TURFGRASS intensively managed and used, such as in golf course operations, requires a well planned fertilizer program to maintain plant vigor througohut the season and from year to year.

Nutrient deficiencies are normally quite simple to correct (or avoid) by means of fertilizer applications. Many fine products are available on today's market that are both effective and easy to use. Iron, however, is a somewhat more difficult problem, especially in the calcareous soils common to much of the western United States.

Soil Iron

Mineral soils contain an abundance of iron. Quantities generally range from 0.5 to 3% of the total soil weight. This is about the equivalent of 400 to 2500 lbs/1000 sq. ft. to a depth of 1 foot. The total content of soil iron, however, does not reflect the iron supplying power of the soil (plant available iron).

Soils having a high pH and high lime content (calcareous soils) are most apt to have a deficiency of plant available iron. This is referred to as "lime-induced" chlorosis and is a common problem in much of the arid west. When soluble iron is added to these soils it is rapidly oxidized from the ferrous (Fe^{2+}) to ferric (Fe^{3+}) form and precipitated as insoluble or very slightly soluble oxides and hydroxides (Figure 1.). Due to these reactions the availability of iron (native compounds and commercial inorganic products) for plant uptake is at a minimum above pH 7.5.

Iron deficiency may be induced or accentuated by heavy phosphorus fertilization. This apparently is due to a physiological antagonism within the plant itself which inactivates a portion of the absorbed iron.

Other conditions which favor iron deficiency include cool temperatures and high soil moisture. In years when we experience cold, wet springs, deficiencies are more prevalent. Over-watering can give the same results. An imbalance of metallic ions, such as high availability of copper or manganese in relation to iron can also induce iron deficiency symptoms. Water containing bicarbonate will tend to raise the pH in the rhizosphere favoring iron precipitation and deficiency.

Iron in Turfgrass

Turfgrass production is a unique form of agriculture. Success is not measured by total production, but rather by appearance. Crop quality — intensity of color — is of paramount concern.

The objective in turfgrass production, therefore, is one of producing chlorophyll. Related to this goal is the genetic ability of the turfgrass itself to produce chlorophyll and any

(continued on page 30)

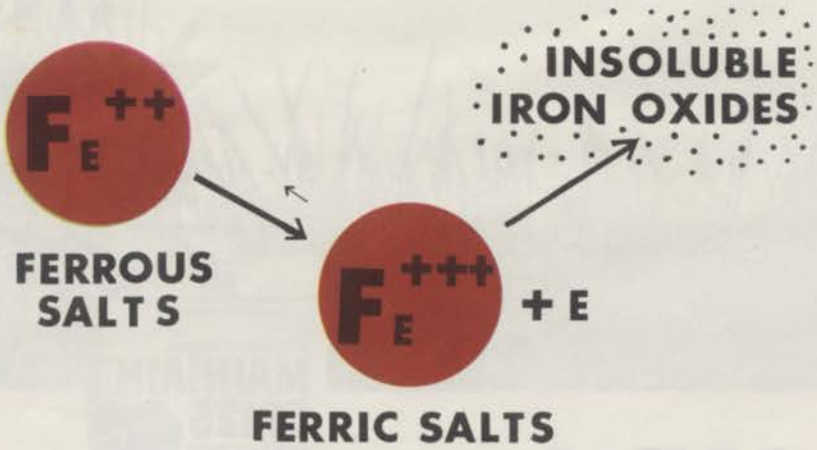

FIGURE I. Soluble iron is rapidly precipitated when added to calcareous soils.

Get rid of unwanted green growth before it cuts into your profits.

The weed onslaught is just about universal.

An expensive headache.

For utilities, railroads, highway departments, the petroleum industry and industry in general.

But there is a way to control that costly green tide—with Tandex® herbicide.

It's a urea-carbamate compound that gives outstanding extended control over a range of weeds and grasses.

But it's more than weed control.

It's brush control, too. If you've got to get rid of really tough brush and woody vines, Tandex gets the job done.

You can spray Tandex or apply it in dry granular form.

Either way you use it, you'll control that costly green tide.

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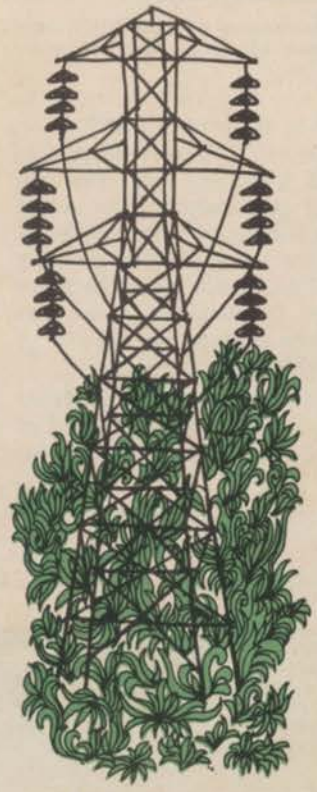
FOR RAILROADS



FOR UTILITIES

FOR ROADS

TANDEX HERBICIDE

INDUSTRIAL CHEMICALS DEPT.
NIAGARA CHEMICAL DIVISION
MIDDLEPORT, NEW YORK

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For More Details Circle (123) on Reply Card

Course superintendent Charles Santoianni of Island Hill, Sayville, Long Island, says Poa annua bluegrass is a mainstay on many courses in his area.

Long Island, N.Y.: Poa Annua Country

These Managers Whipped Weevil Worries

A WEED is a weed wherever it grows. True?

Not necessarily. Golf course superintendents in many parts of the northeast know its not true. On courses in most other parts of the country, Poa annua bluegrass is nothing but a nuisance. In this area, however, where short summers are the rule and growing conditions are far from ideal, Poa annua takes the place of the grasses normally used in southern areas and warmer climates. The hardiness and quick growth of this grass makes it an acceptable substitute.

However, Poa annua brings with it problems all its own, says Charles Santoianni, course superintendent of Island Hills at Sayville, Long Island, and insect control leads the list.

During the past few years northeastern superintendents have found a new pest attacking the Poa annua they have been relying on.

Its the hyperodes weevil which first appeared in the area in 1967 and has been rapidly multiplying since. The resultant damage from the pest, which feeds only on Poa annua, has been an increasing problem on many courses.

The weevil has been found in nearly all areas where Poa annua is used to provide a grass cover, but golf courses have been especially hard hit, since intensive turf management seems to encourage the spread of the pest.

Santoianni employs frequent Diazinon insecticide, Agrico 12-4-8 fertilizer, and Acti-Dione R2 fungicide applications on his Island Hills course. Diazinon is

(continued on page 34)

Frequent light chemical applications are the rule at Island Hills. Granular insecticides are used to control Hyperodes weevils, sprays for others.

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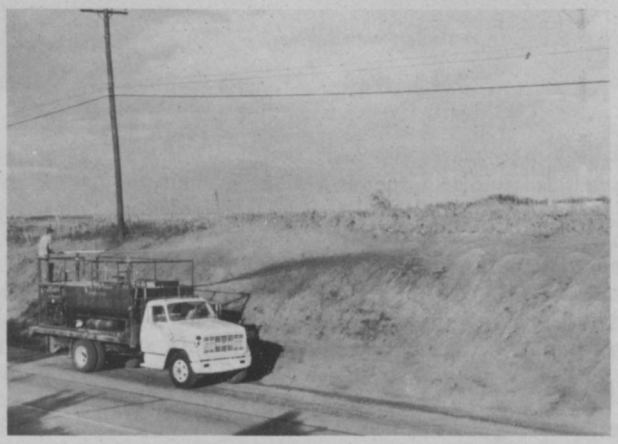

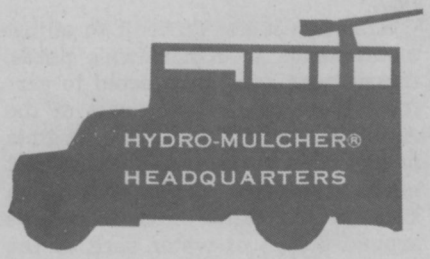

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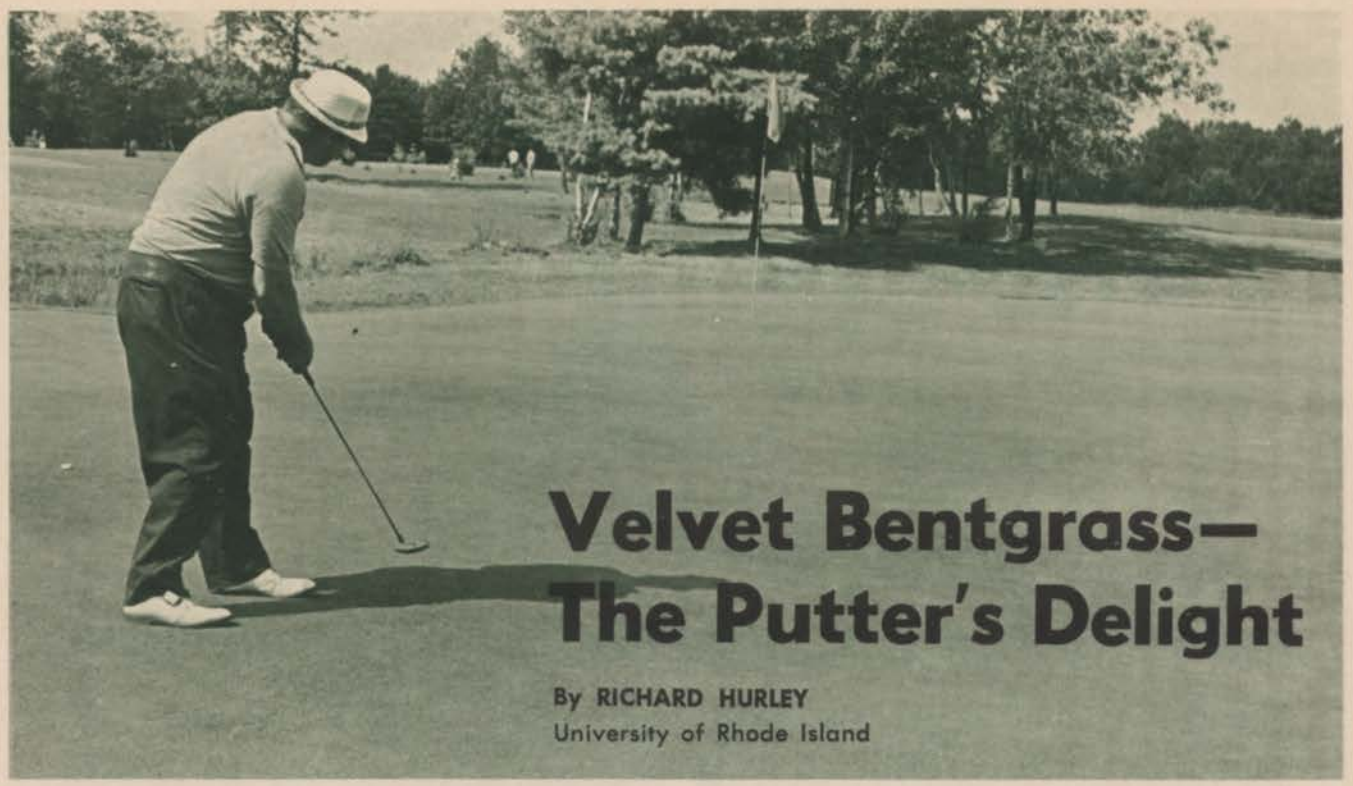

Velvet Bentgrass— The Putter's Delight

By RICHARD HURLEY
University of Rhode Island

VELVET bentgrass, *Agrostis canina,* is widely acclaimed as the most exquisite of all sports turfs. Not only does the species have a superb appearance, but professional golfers have rated it the number one putting surface in actual test. Velvet bentgrass is well named, for golf greens of it are so dense and fine-textured as to be indeed like velvet.

The new Kingstown variety of velvet bentgrass results from a quarter century of breeding and selection at the University of Rhode Island. This stylish, highly uniform cultivar, as true-putting as greens can be, stems from a single seed selected from a selfed plant of the Piper variety.

Unlike most of the creeping bentgrass greens grasses, which must be planted vegetatively from living stolons, Kingstown velvet bentgrass is available as conveniently handled seed bred remarkably true-to-type. Top quality seed is free of weeds and from crop. Wider use of velvet bentgrass can be anticipated, now that commercial supplies of Kingstown seed have become available. Seeding is economical, in that only one pound of seed per thousand square feet is needed.

The areas shaded in green represent the zone of greatest probable usefulness of Velvet bentgrass. It is available from Lofts Pdigreed Seed, Inc., Bound Brook, N.J.

SPECIES ADAPTATION

Velvet bentgrass has undeservedly had a reputation for being hard-to-manage. We haven't found this to be so in Rhode Island. At Melody Hill, as on the research grounds at the University of Rhode Island, Kingstown velvet bent has proven dense, deep-rooting and reasonably free from afflictions without a lot of special care. It's not a heavy feeder, withstands reasonable drought and shade. Of course like any top bentgrass, Kingstown is deserving of knowledgeable attention.

The species is widely adapted to moist climates, and although tolerant of extremes does best where weather is steady (neither suddenly cold nor hot, and without desiccating winds).

Kingstown is rather particular about acid soil, and resents an alkaline pH.

Good drainage (aeration) is helpful.

Although it not difficult to adjust maintenance to Kingstown's needs, the cultivar can be expected to perform most satisfactorily east of the Appalachians from coastal Virginia northward, along the Pacific coast north from San Francisco, and in similar "maritime" environments around bodies of water such as the Great Lakes.

(continued on page 35)

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TURF HERBICIDE IS THE SELECTIVE KILLER

NOW YOU CAN ATTACK THE WHOLE SPECTRUM OF BROADLEAF WEEDS USING TRIMEC® TURF HERBICIDE.

TRIMEC TURF HERBICIDES ARE EFFECTIVE!

We haven't found a broadleaf weed Trimec Turf Herbicides will not control. We're still experimenting . . . still looking for the Trimec-resistant broadleaf weed, but so far we haven't found it.

TRIMEC TURF HERBICIDES ARE ECOLOGICALLY SOUND!

The unique action on the combined biodegradable components of Trimec are so effective you need less herbicide per square foot to kill undesirable broadleaf weeds. Trimec Turf herbicides have a low toxicity to wild life and fish. Trimec is non-volatile and will not damage ornamental shrubs, trees and sensitive grasses when directions are followed.

TRIMEC TURF HERBICIDES ARE ECONOMICAL!

Trimec Turf Herbicides will control more weed species per dollar. Controls even tough, hard-to-kill weeds. Trimec Turf Herbicides mix readily in all kinds of water, are easy to use, effective and economical.

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For More Details Circle (139) on Reply Card

State Of The Industry Report

1973 Golf Outlook

By HARRY ECKHOFF
East Coast Facility
Development Consultant
National Golf Foundation

WITH 297 new golf courses or additions to existing facilities in some stage of construction throughout the nation at year's end, 1973 promises to be another good year for golf course development. A year ago, National Golf Foundation records showed 290 courses in the under construction category.

New regulation length courses currently under construction total 181; additions to existing courses account for another 81. For executive courses the figures are 11 and 6 respectively; for par-3's 16 and 2. There are also another 330 courses under consideration or in planning throughout the nation. They include 279 regulation length facilities, 24 executive type and 27 par-3's.

Texas leads with 25 golf courses under construction followed by Florida with 23, California 18, Ohio 17, Colorado 16, South Carolina 15, Georgia 12, Michigan 11 and ten each for Illinois, New York and Virginia.

The leading states with new golf course openings in 1972 were Florida 23, California 18, Ohio 14, Texas 13, Arizona and Illinois each 12, Michigan 11, Indiana and Washington each 9 and Kansas, North Carolina, Pennsylvania, Tennessee and Wisconsin each 8.

NFG records reveal that 271 new golf courses were reported opened for play in 1972. Of these, 181 were 9 hole layouts, 85 were 18 hole facilities and 5 were other than 9 or 18 hole operations. Included in the year's 271 total are 237 regulation length golf courses of which 157 were new facilities and 80 were additions to existing courses. Of these 237, about 31% were reported as private operations; 54% semi-private; 12% municipal and 3% miscellaneous (collegiate, industrial, military, etc.).

There were also 18 new executive type courses opened for play in 1972 (14 new facilities and 4 additions). Par-3's (14 new courses and 2 additions) accounted for another 16 of the year's total of 271 new facilities. NGF maintains a national inventory of all the country's golf courses by category, number of holes and location.

Golf Oriented Developments

Golf oriented planned communities and second-home recreation-resort complexes played a dominent role in golf facility development in 1972 and will continue to do so in the immediate years ahead. Of the 271 new golf courses opening last year, almost half (45.76%) were of this type.

Golf-real estate or resort developments comprised about 35% of the 1971 total new golf course openings. Such projects have been on a gradual increase since 1965 when 15% of the total new golf courses opening for play were parts of real estate ventures.

A growing number of land developers recognize that properly designed and constructed golf courses materially increase adjacent property values and substantially aid sales of home sites, condominiums and apartments. Acreage involved in such ventures usually ranges from 600 to 35,000 or more. In the larger developments there often are several golf-recreation complexes. Golf course home site lots usually range in price from $6,000 to $15,000 depending on their size and proximity to the course.

Seventy-five percent of the golf courses now under construction in Florida are associated with home sites and high rise condominium developments. Fifty-eight percent of Arizona's new golf ventures are in the same category. In North Carolina, it is 52%. Of the 15 golf courses now being built in South Carolina, 80% are part of land sales or resort complexes.

Experienced land developers generally agree that an expertly designed and properly built golf course should be ready for play before real estate sales are begun. Most prospective purchasers prefer to see the golf facilities in action prior to buying a home site or condominium.

Many developers separate the golf operation from the land sales and create separate corporations or organizations for each. This facilitates sale of the golf course should

that be desired at some future date.

Two new golf-resort facilities that may be establishing a pattern for the future are Bay Tree Golf Plantation and Myrtle Beach National Golf Club, both of which are under development in the greater Myrtle Beach, South Carolina, area.

Bay Tree Golf Plantation, a 54 hole layout designed by George Fazio and associate Russell Breeden, went under construction in October 1971 and all three 18's opened for play on November 18, 1972. This is believed to be a record for constructing three 18 holes layouts simultaneously and having them all ready for play within a year's time. Golf professional at Bay Tree is Sam Timms. Developer is Caro-Strand Corporation, North Myrtle Beach, S.C., J. Bryan Floyd, President.

Myrtle Beach National Golf Club, a new planned 72 hole golf and residential complex, went under construction in May 1972. Golf course architect is Frank Duane with Arnold Palmer acting as consultant. Construction is now underway on three of the planned four 18 hole layouts according to Clay Brittain, President. Ed Bullock is the club's Golf Professional.

South Carolina's Grand Strand resort complex, a 50 mile long stretch of seashore bounded on the east by the Atlantic Ocean and on the west by the Intracoastal Waterway, is making history in golf course development.

Grand Strand, which includes the town of Myrtle Beach, has a permanent population of about 18,000. Located within its confines are 17 challenging golf courses and over 30,000 hotel-motel rooms. Six more 18 hole courses are currently under construction in the area.

Some resorts make it possible for you to own your own apartment in the vacation complex and, when you are not in residence, will rent your quarters for you. One such new and apparently successful project is the Innisbrook Resort and Golf Club near Tampa, Florida.

Innisbrook is an 800 acre development which has plans for four golf courses and 1200 apartment units (efficiencies, one and two bedrooms), Three full length 18 hole courses, all designed by Larry Packard, are now in play. An additional 18 hole course has come into play each December for the last three years. There are clubhouses with full dining facilities for each golf course along with its cluster of apartments. Mike Souchak is the resident Golf professional at Innisbrook.

Need For More Municipal Golf

Population growth, urbanization, more leisure time and increased personal income and mobility throughout the United States are putting great presure on public recreation facilities including golf courses in many areas of the nation. A good solution to the demand is more municipal courses owned and operated by cities, counties, states or regional park-recreation districts.

Why municipal golf courses? Practical politics and economics dictate such action.

Land costs and operating expenses, including rising taxes, make it increasingly difficult for member-owned clubs and private courses to financially survive in some communities.

More financial resources are available to municipalities. Among them are sale of general obligation or revenue bonds, federal grants (Department of Interior Bureau of Outdoor Recreation 50% matching grant program), private development with leaseback and outright public or private donations.

(continued on page 38)

The Economical Way To Utilize Nature

Let Porta-Span® give your trails and walk ways a touch of rustic charm. Porta-Span® bridges streams and gulleys to make your park more interesting.

The Porta-Span® installs practically anywhere in about two hours. No footings or base required. Move it when you want and store it during the winter.

Pre-treated weather-resistant Cedar with laminated arch beams and galvanized steel construction will support 2,500 pounds. Eight different models available from 8′ to 20′ in length, 3′ and 5′ widths.

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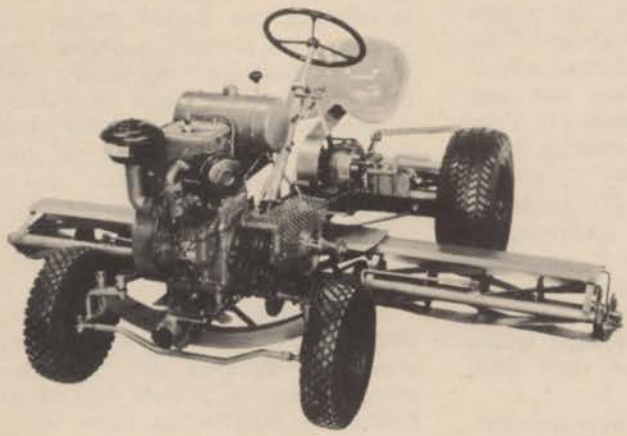
A workhorse won't win a beauty contest



You won't find fancy shrouds, shiny hubcaps or chrome accent strips on a NATIONAL "workhorse." Our 84" and 68" Triplex Mowers are not designed for beauty

...Just performance and durability!

☐ **FAST!** With an 84 and 68-inch cut, NATIONAL Triplex mowers cut grooming time in half around greens and traps.

☐ **EFFICIENT!** National's Triplex maneuvers sharply, climbs banks and hillsides easily and safely. Three, power driven, free-floating reels follow ground contour. Reels do a precision job without skip or scalping. Handles the clubhouse lawn and practice areas, too!

☐ **DURABLE!** Timken bearings; automotive-type transmissions; heavy duty, tubular steel tie rods and bed knife frame; and cutter lip bar...all add up to more years of use!

☐ **SERVICEABLE!** No-nonsense design makes normal service faster than any mower on today's market!

NATIONAL...our reputation is your guarantee of quality! Our start in 1919 makes us one of the (if not the) oldest power mower manufacturers in the U.S.A.

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industry people on the move

NORMAN R. HILBERT, joined the agricultural chemical division of Stauffer Chemical Co. as a sales representative.

* * *

P. ROBERT SCAGNETTI purchased The Clapper Co., West Newton, Mass., and becomes a distributor of Toro irrigation and turf products. He was formerly director of marketing and service in the turf products division of Toro. Orville O. Clapper, who founded the West Newton company, is retiring.

* * *

RON R. JOHNSON, named vice president of marketing for Agrico Chemical Company. He will be responsible for all domestic marketing in the U.S. and Canada.

* * *

G. C. "HARDY" BRYARS, appointed manager-pesticides for the Gulf Oil Chemicals Company. He will have worldwide responsibility for the company's proprietary environmental protection chemicals.

* * *

H. DUANE HOLSAPPLE, appointed marketing manager of Encap Products Company. He will head the marketing and sales programs.

* * *

DR. PHILIP M. KIRK, named director of the Greensboro, N.C. facility of Ciba-Geigy Corporation.

* * *

ROBERT SULLIVAN, named data processing manager for Yard-Man, Inc. He will be responsible for evaluating the company's computer system and recommending how it can be expanded to coordinate increased informational input on scheduling, costing, purchasing and shipping for maximum manufacturing efficiency.

* * *

J. SCOTT JEFFORDS, JR. and JERRY M. SPIVEY become agricultural sales representatives for Thompson-Hayward Chemical Company. Jeffords will be headquartered in Fayetteville, N.C. and Spivey will be working in the central and southern regions of Alabama.

* * *

JOHN E. CLACK, appointed sales manager of Ace Pump Corporation.

* * *

FRANK H. HAMLIN, president of Papec Machine Company, retires after 44 years of service. **W. N. HOWLEY, JR.,** assumes the presidency of the company.

* * *

LEO DONAHUE, appointed to the staff of the American Association of Nurserymen as the administrator responsible for legislative liaison. He replaces **RICHARD TURNEY** who has taken a position with the National Association of Wholesalers.

* * *

WILLIAM SOELLNER assumes responsibility for all Bolens branch operations in Wisc., Ill., Mich., Minn., Ind., and the Dakotas, a newly created position. **GARY K. AKIN** becomes branch manager in Michigan. **NORMAN O. WHITE** becomes branch manager in Minnesota. All are with Bolens Division, FMC Corporation.

* * *

NICHOLAS V. CORDA, named manager of safety for Hercules Incorporated. His new duties will encompass the safety functions at all commercial plants as well as those of the Systems Group of the Industrial Systems Department of the company.

Agrico puts you eighteen up on the competition, before the competition even begins

Agrico Country Club fertilizers will help you get the most out of your golf course . . . the most people, the most wear, the most green. We've spent a lot of time developing a custom-tailored program for your golf course. We sincerely believe that it's the best there is. If you want a greener, thicker golf course, use Agrico. And you can stay eighteen up all year long.

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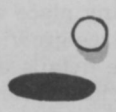

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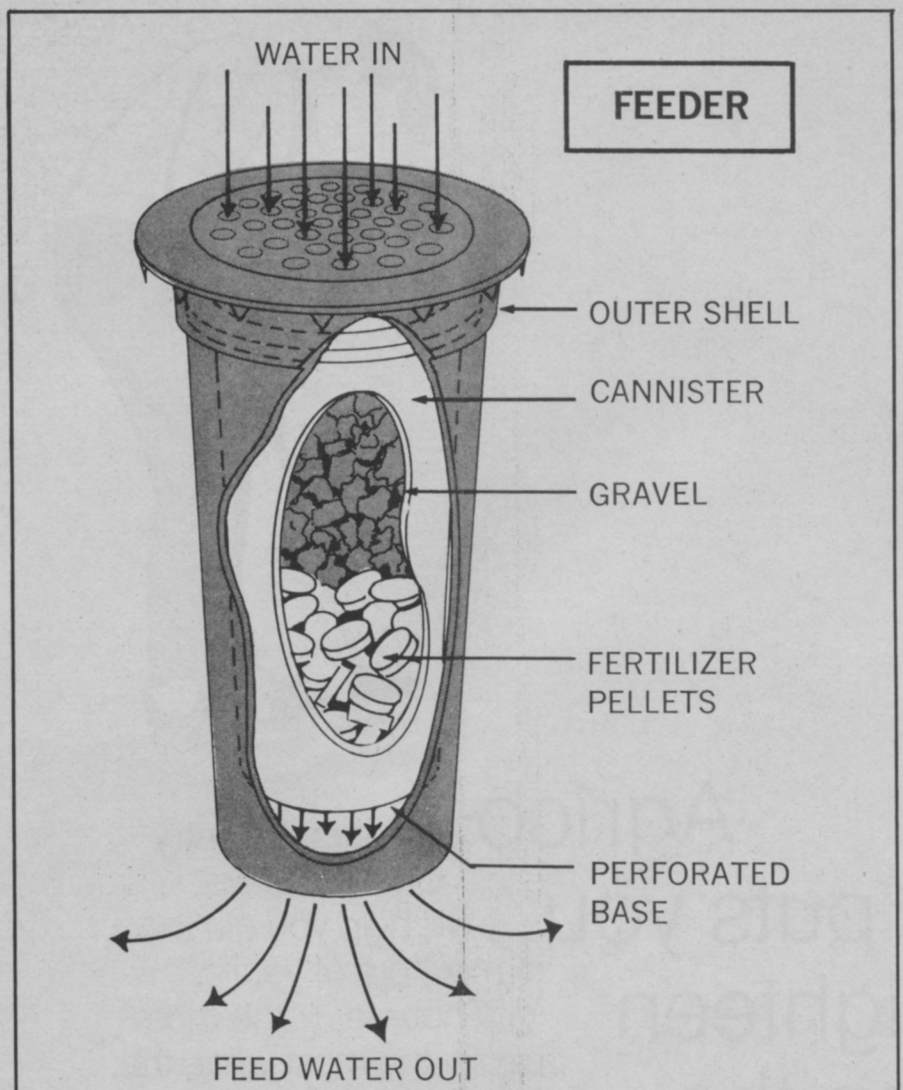
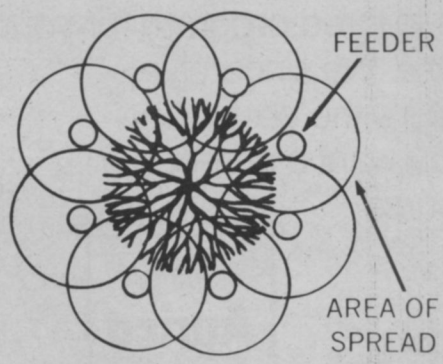
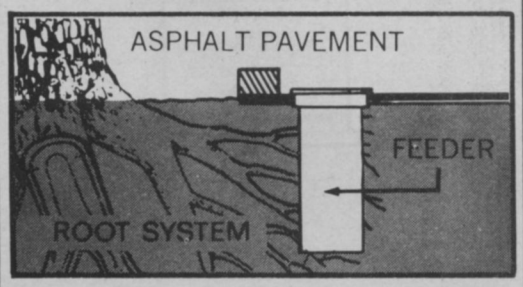
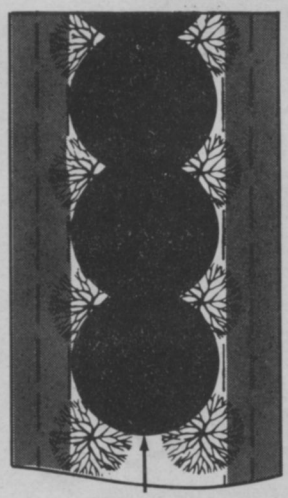




FEEDERS CIRCLE TREE



PARKWAY



ONE FEEDER CAN SERVICE MANY TREES

In-Ground Feeder Keep Trees Healthy

TREES surrounded by asphalt are like a runt pig in a healthy litter —neither get enough of the essential nutrients to sustain growth.

Wayne Smith, owner and operator of AAA Tree Service, Tampa, Florida has found the answer, however. He's invented a unique device called W.A.N.E. (water, air, and nutrition exchange) that is not only keeping trees alive, but helping them to grow.

It's a heavy-duty plastic housing which holds a removable inner sleeve containing time-release nutrients. The housing is inserted into a four-inch diameter hole drilled 18 inches deep through the asphalt. The perforated top protrudes one-quarter inch above the ground.

Fertilizer pellets are placed in the inner sleeve; gravel is added to fill the cannister. It is then inserted into the outer shell. Water and air filter through the gravel and solublize the fertilizer which is carried downward to the root zone.

Smith says the system can be installed in 10 minutes and annual servicing can be accomplished in another simple 10 minute operation. He recommends inserting the W.A.N.E. system at 10 foot intervals around the tree, approximately five feet from the drip line of the canopy.

Can be installed in a street, parking lot or any place where asphalt is inhibiting tree growth.

For more details on the W.A.N.E. Tree System, circle (719) on the reply card.

Forests Hold Answer To Garbage Pollution

What to do with the daily accumulation of some one billion pounds of garbage is one of the nation's most vexing environmental problems. But two University of Florida researchers think they have the answer to the garbage crisis.

Instead of burning it, dumping it in landfill, or trying to make some sort of marketable product out of it, they want to recycle it through forest soils. Their new procedure involves grinding up the garbage and mixing it into forest soils where it can decompose.

Experiments at the UF's Austin Cary Forest have shown that pine seedlings thrive in soil mixed with solid wastes. Seedlings planted in the garbage-soil mixture have grown twice as tall as those planted in regular soil, says Dr. Wayne H. Smith, associate professor with the UF's Institute of Food and Agricultural Sciences.

He pointed out that much emphasis has been placed on developing some sort of marketable product from garbage. "Everything from fertilizers to breakfast cereals has been tried with little or no success. Even composting plants, including one operated in Gainesville for a short time, have failed because of the high cost of their product and the limited market for it. The real need is to develop an inexpensive method of disposing solid wastes without harming the environment. Conservationists have long encouraged this approach," he said.

Results of the study indicate that a few hundred acres of forest land could receive all of the annual solid organic waste produced by Gainesville, a city of about 100,000. Growth stimulation of pines and vegetation would serve as an incentive for foresters to allow neighboring municipalities to use their land for recycling wastes.

Besides boosting tree growth, there are other reasons for disposing solid wastes on forest lands. Since trees are not a food product, there's no risk of any kind of human contamination, and the long growing period for pines—20 to 30 years in the South — would allow large amounts of organic material to decompose slowly.

In addition, many forest areas are close to urban areas, and have a very low population density. Tests indicate there's apparently no danger of any ground water contamination either.

The organic waste tested for disposal in forest soils was produced from garbage after most metals were removed. The waste was then ground up and mixed with sludge from a secondary sewage treatment plant.

All timber was removed from the 4-acre site some two years before the beginning of the experiment. Immediately after the waste was delivered to the site, it was incorporated into the soil, but seedlings were not planted until some five months later in December, 1971.

"By early spring of this year, it was quite obvious that the pine seedlings on the compost treated plots were reacting favorably," explains Don Post, an assistant professor working with Smith on the project.

After seven months of growth, survival and tree height were measured. Survival on the control (non-treated) plots averaged 86 percent compared to 88 to 95 percent on the compost treated plots. Most of the mortality occurred during the dry period of April, indicating a greater moisture holding capacity in the composted plots.

Freddy the Fish

We can't help you with Freddy the Fish.

But if you've got leaf spot and rust we have something to help you get rid of them.

SUP'R-FLO Maneb Flowable. It controls these enemies of the turf and gives more uniform coverage. As well as fewer clogged spray nozzles.

It helps keep your greens (and fairways) in the pink.

SUP'R-FLO Maneb Flowable.

From Rhodia Chipco Products.

Rhodia
CHIPMAN DIVISION

"What do you mean the course is too wet for a golf cart?"

For More Details Circle (125) on Reply Card

This is the way Old White Fairway 11 looked five months after treatment with Dasanit. Between October 1971 and October 1972, nematode count dropped from 5490 to zero. (See Table 1 below).

Nematodes

Could Your Turf Be Their Home?

I'M CONVINCED that nematodes are bad characters. If there are any around, they will get to you. So, if you have an unanswered problem with your turf, I'd check for nematodes quick," says W. D. Haven, golf and grounds superintendent for the Greenbrier, White Sulfur Springs, West Virginia.

Bill is speaking from first-hand experience. Various "culprits" such as fruit flies and *Fusarium* had been blamed for problem areas which developed in 1971. Several of the 54 fairways and greens on the 6500 acres comprising the famed luxury resort had been under attack.

"There are so many variables in maintaining a course — weather, weed, insect and disease control, drainage, fertilizing—that we can't always be sure that any one factor is responsible for a particular success or failure," Bill remarks. "But the rewards are proportional to the risks, and it's fascinating to see the turn-around when a problem is solved.

"Of course we tackle each problem as soon as it develops. We treated for fruit flies and *Fusarium,* but still had some yellow-white quarter-size spots that didn't resemble any of the diseases I know about. There is very little information available on nematodes in turf, but I read what I could find and wondered if, in fact, these small, wormlike insects weren't gnawing away at the roots.

"So, in October, 1971 I sent soil samples from several fairways and greens to Virginia Polytechnic Institute (VPI) for a nematode assay.

"The high counts that were reported (see Table 1) were astounding. That started my search for a chemical to control nematodes. I wanted one that was easy to apply, with minimum hazard to the people working with it and the golfers using the course following application. I was also looking for a fast response, and long-lasting activity.

"I found the answer in Dasanit 15% granular," says the superintendent. "It fits in with our equipment, goes right to work without burning, and one application lasts for the season." Haven reports that the product does give off an unpleasant odor, which lasts about 24 hours, but he did not have one complaint about this from any of our clientele, which is unusual.

"I first treated all tested fairways, as well as those which looked suspicious (it ended up to be all but a half-dozen) and then applied Dasanit on all the greens," he said. "We aerated each before treatment, then turned on the irrigation so that the granules would work right down to the root zone." The work started in mid-May, 1972 and wasn't finished until August. Even with 30

Table 1. Nematode Counts per 100 cc soil taken in October 1971 before treatment and in October 1972 following treatment.

Area	Ring (Criconemoides) Before	Ring After	Lance (Hoplolaimus) Before	Lance After	Stunt (Tylenchorhynchus) Before	Stunt After	Spiral (Helicotylenchus) Before	Spiral After
Old White Fairway 1	710	....	70	....	1070	....	10	....
Old White Fairway 3	1080	4	....	4	600	....	....	....
Old White Fairway 4	490	4	....	4	430	....	....	4
Old White Fairway 9	390	....	20	4	530	4	....	....
Old White Fairway 11	3060	....	80	....	2800	....	....	....
Old White Fairway 13	340	20	20	24	660	....	10	4
Greenbriar Fairway 1	380	4	90	4	30	....	....	12
Greenbriar Green 7	....	....	300	16	190	....	....	....

men, it took considerable time to cover 600,000 square feet of greens and tees, as well as a goodly share of our 120 acres of fairway.

"Just to be sure we were on the right track, in June, 1972 I sent more samples from one of the same fairways plus other 'suspects' to another laboratory in Georgia for nematode analysis," Haven injects. While these early-season counts were much lower the laboratory felt they were high enough to constitute a problem, and also recommended treatment.

"And to be sure I was using the right product, I set up 5 x 10-foot test plots on one green comparing half- and full-rate treatments of Dasanit, Nemacur (an experimental compound) and several other products," he says. "Dasanit effectively controlled the nematodes. As for the Nemacur, it looked even more promising on these test plots."

The West Virginia golf superintendent notes fantastic improvement on several of the fairways and greens. He concludes that the nematode treatment was responsible for it. "I feel sure these pests have been causing problems for some time," he says. "We just didn't recognize them.

"For example, the 9th green on Old White has been a problem year after year. The back third continually got thin and sparse early in the season. We tried everything—aeration, micro-nutrient testing, regular fertilizing—to no avail. But the problem cleared up within 3 weeks after treating for nematodes in early June, and the green stayed in good condition through October.

Currently only one treated fairway is not up to par. Haven's not sure but that weather, time of treatment or some other factor or combination of factors is responsible for that.

"I attribute a good part of our turfgrass success to our nematode control program," he says. "Dasanit has controlled one of the toughest problems we have in this business. There's no question that we have deeper, healthier roots than ever before. Last fall we used less fertilizer than usual, but it was better utilized by more roots with the nematode menace gone."

Follow-up soil samples sent to 3 laboratories in October are now being correlated, but the results (see Table 1) support Haven's contention that nematodes can be drastically reduced with a single application of a nematicide.

"You've got to always be on your toes," Bill asserts. "You can't have a first-class golf club with second-class grass. You can be sure I'll be treating again next year."

W. D. Haven says that typical symptoms of nematode damage are irregular bare patches. A nematode assay can quickly determine whether you have a problem.

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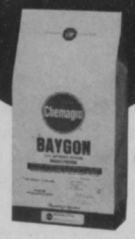

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IRON FOR TURFGRASS

(from page 16)

environmental factor that affects chlorophyll production. Iron is not a constituent of the chlorophyll molecule (as are nitrogen and magnesium) but is essential in the chlorophyll-producing mechanism.

There is a paucity of information on the role of iron in turfgrass production. However, Pocklington has done an interesting study on the relative abilities of five bentgrass varieties to produce chlorophyll under different growing conditions. He noted that those varieties having the higher chlorophyll contents are the darker green.

Since considerable research has been conducted to select turf varieties with genetic abilities to produce dark green leaves the need for iron by certain varieties may have been significantly increased. Chlorophyll production is, of course, a basic consideration.

Pocklington demonstrated that chlorophyll contents are not constant throughout the growing season but vary in accordance with the available sunlight. Thus the color intensity of grass could be expected to be less in the spring and fall months when net solar radiation is less.

It was further noted that varieties having the less intense green color and chlorophyll content were also lower in iron. However, total iron in each case investigated appeared to be sufficient for normal physiological activity.

Identifying Iron Deficiency

Identifying iron deficiency in turfgrass can be a relatively simple matter. Nitrogen and sulfur deficiencies will both give similar symptoms. However, under a proper fertilizer management program, nitrogen will be adequately supplied on a routine schedule. Sulfur deficiency in the western United States is a rare occurrence. If cases of sulfur deficiency are known to occur in an area, they can easily be verified and corrected through fertilization with various sulfur containing materials.

Iron deficiency will cause the leaf blades to turn lime-green, then yellow, in color. Growth will otherwise appear normal except under acute conditions. The yellowing (chlorosis) will not be uniform over the entire area, but will appear as randomly scattered spots giving a mottled appearance to the area. Such a mottling is typical of a micronutrient deficiency thus aiding in separating iron deficiency from that of nitrogen or sulfur.

Suspected deficiencies can be verified by a soil test. Until recently there was not a satisfactory method to evaluate plant available iron.

The DTPA soil test developed recently by Lindsay and Norvell, Department of Agronomy, Colorado State University, has proven to be a sensitive indicator of available soil iron, and also zinc, manganese, and copper. This procedure has been evaluated mainly with the "traditional" agricultural crops such as, corn, potatoes, etc. However, experience indicates it to be equally effective for turfgrass.

Correcting Iron Deficiency

The reason iron deficiency exists is the same as why it is difficult to correct. That is, an unfavorable soil environment which favors formation of unavailable iron compounds in the soil.

At this time specific recommendations for golf courses and other large scale turf production operations are rather difficult. Little research has been conducted to evaluate the various possibilities based on effectiveness, cost, and compatability with other management practices.

Iron (ferrous) sulfate is the most widely used material today. It is frequently included in the so-called "turf" fertilizer mixes on the market. The extent of its effectiveness will likely depend on the actual amount being applied per unit area and the severity of the deficiency. *As much as 1 lb ferrous sulfate /1000 sq. ft. in a single application may be required per growing season depending on the specific situation.*

Rapid though perhaps short-lived effectiveness may be gained by spraying ferrous sulfate on the turf. Recommendations as to rate of application are quite variable. One reference (Lock and Eck) suggests mixing 1 lb. ferrous sulfate/5 gal. water and applying at the rate of 12½ gal/100 sq. ft. However, another (Younger) suggests 2 oz. ferrous sulfate/1000 sq. ft. These probably represent extremes.

It has been reported by one Colorado State University extension specialist that ½ lb. ferrous sulfate/-1000 sq. ft. applied as a foliar spray will satisfactorily eliminate deficiency symptoms.

Various chelated products are also on the market. One of the most promising for soil application is Sequestrene 138 (FeEDDHA). Experiences in Colorado on turfgrass seem to range from poor to satisfactory results.

The problem we face today in correcting iron deficiency in turfgrass is lack of research information. Both inorganic and chelated products are on the market. However, how these may best be used in your particular operation is very much open to question.

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—meeting dates—

Golf Course Superintendents Association of America, 44th annual International Turfgrass Conference and Show, Boston, Mass., Jan. 7-12.

New York State Arborists Convention, Annual, Nevele Country Club, Ellenville, N.Y., Jan. 14-17.

Georgia Plant Food Educational Society, annual meeting, Rural Development Center, Tifton, Ga., Jan. 15-16.

California Weed Conference, 25th annual, Disneyland Hotel, Anaheim, Calif., Jan. 15-17.

Michigan Turfgrass Conference, 43rd annual, Kellogg Center, Michigan State University, E. Lansing, Mich., Jan. 16-17.

Southern Weed Science Society, 26th annual meeting, Jung Hotel, New Orleans, La., Jan. 16-18.

Ohio Chapter, International Shade Tree Conference, annual meeting, Sheraton-Columbus Hotel, Columbus, Ohio, Jan. 21-25.

Colorado Farm Show, Greeley, Colo., Jan. 22-24.

Allied Horticultural Trades Congress, including the Nursery Sod Growers Assoc., Ontario Nursery Trades Assoc., Ontario Landscape Contractors Assoc., Ontario Garden Maintenance and Landscaping Association, Inc., Skyline Hotel, Toronto, Ontario, Can., Jan. 22-24.

Associated Landscape Contractors of America, 11th annual meeting and trade exhibit, Doral Country Club and Hotel, Miami, Fla., Jan. 22-26.

University of Tennessee, one week Winter Short Course in Turf Management, West Tennessee Experiment Station, Jackson, Tenn., Jan. 22-26.

Midwest Turfgrass Growers Association Meeting, Holiday Inn, I-29 and Arapahoe Rd., Denver, Colo. Jan. 24.

Rocky Mountain Regional Turfgrass Conference, 19th annual, Colorado State University, Fort Collins, Colorado, Jan. 25-26.

Penn-Del Chapter, International Shade Tree Conference, annual meeting, Marriott Motel, Philadelphia, Pa., Jan. 25-26.

Annual Winter Seminar for Commercial Arborists, O'Hare Concord, Rosemont, Ill., Jan. 30.

Virginia Turfgrass Conference, Sheraton Motor Lodge, Fredericksburg, Va., Jan. 30-31.

Northwest Agricultural Show and Education Meeting, Portland Coliseum, Jan. 30-31, Feb. 1.

Tennessee Turfgrass Association, annual conference, Roger Millers King of the Road Motor Hotel, Nashville, Tenn., Feb. 5-6.

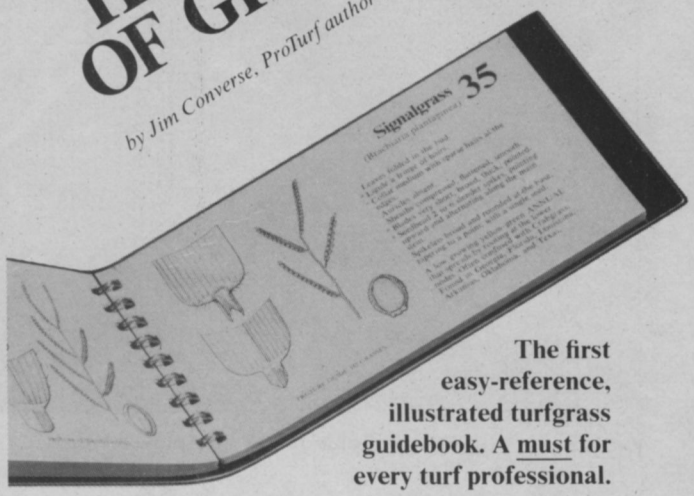
Midwestern Chapter, International Shade Tree Conference, annual meeting, Holiday Inn, 1926 W. Wisconsin Ave., Milwaukee, Wisc., Feb. 6-8.

Northern California Turfgrass & Environmental Landscape Exposition, 9th annual, Hall of Flowers, San Mateo County Fairgrounds, San Mateo, Calif., Feb. 7-8.

Golf Course Superintendents, Mid-Atlantic Association, annual conference, Lord Baltimore Hotel, Baltimore, Md., Feb. 12-13.

GUIDE TO THE IDENTIFICATION OF GRASSES

by Jim Converse, ProTurf author and illustrator



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Cable is fed into plow blade.

Operator breaks up rocks in first pass.

He Plows A Path For Safety

WHETHER you are an amateur or a professional skier, chances are you may be a good deal safer on the slopes this winter. Especially if you ski at Winter Park about 70 miles from Denver, Colorado.

Dave Shelton, director of slope maintenance at Winter Park, has been busy during the "off season" making sure the view is prettier and the telephone service improved. He's been installing underground cable for telephone and electric service and for ski lift communications and operations.

"Being a recreation area, the ecology aspect of it is extremely important to us," he says. "I don't want to under-emphasize that. But service is important, too. Our season runs from around Thanksgiving to mid-April. Interrupted service is very costly. At times we have high winds here and when lines are overhead, there's always the danger they'll snap."

Winter Park is operated by the Winter Park Recreation Association, an agency for the Denver city and county governments. The association operates 34 trails, 7 chair lifts and 2 high speed T bars.

"For us, the ski lift lines are perhaps the most important," says Shelton. Ski lift communications and operations lines go underground. We can operate the lift from the top, while all the equipment that powers it is below. The lines are installed from tower to tower.

Winter Park now uses its own 65-horsepower R65 Ditch Witch trencher with vibratory plow attachment. Before buying Ditch Witch, Shelton says a large, tracked diesel vehicle with a cable-laying ripper was employed. But the vehicle proved cumbersome. Costs were too high. It had to be hauled on a truck. And the machine was difficult to maneuver into position.

Ditch Witch is a four-wheel drive vehicle. It can be driven along the mountain roads and across the rugged terrain. And speaking of terrain, the Rockies are indeed rocky. As the pictures show, it's really the man-made elements against the natural elements.

Crews at Winter Park have done all the work in burying the underground lines. This involved three separate telephone systems and a ski lift communication and operations lines. This includes a race telephone system for use in ski competition, an emergency telephone system for the Ski Patrol and the mountain telephone system for regular telephone service. That comes to about 41,000 feet of ski lift cable and another 28,750 feet of telephone lines. Cable sizes range from 1 pair to 50-pair.

Shelton says they rented equipment the summer of 1970 and have found that the Ditch Witch saved enough in the first summer's operation to pay for itself.

His crew makes one pass along the cable route with the plow in the ground, but without the cable, to break up the rock. A second pass is made to install the cable. This is done to prevent damaging the cable as it is installed.

Shelton concludes that this two-step operation is still less expensive than the original system. In fact, he claims, it's faster and frees the more expensive equipment for other jobs.

Question: How do you clear a right-of-way adjacent to herbicide-sensitive crops and ornamentals?

Answer: Very, very carefully.

It's a tough job clearing weeds and brush that infest roadsides and utility rights-of-way. Doubly so since you have to protect bordering private property at the same time.

With normal spraying techniques, no matter how careful you are, it's impossible to control drift. This can result in damage to crops and ornamentals and lead to costly damage suits.

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Visko-Rhap herbicides are special formulations made to resist drift and withstand wash-off. They're applied in thick, controllable streams that break up into heavy, oil-coated droplets before contact. So when they hit, they stick. And you control only the growth you want to control. You'll also be able to see where you've sprayed.

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But by all means spend some time and find out all you can about Visko-Rhap. It's the spray program that offers you effective weed control and drift control. And peace of mind.

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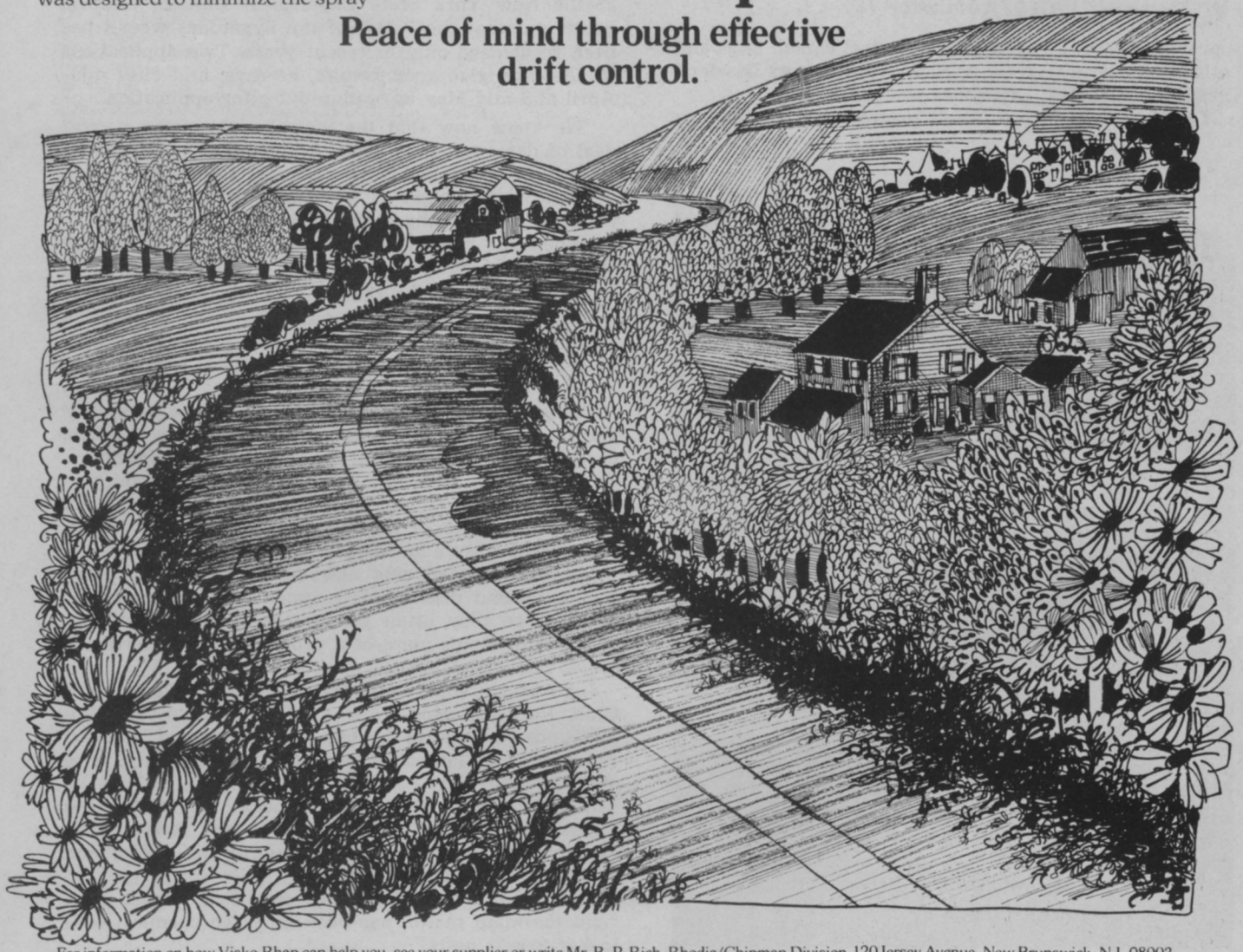

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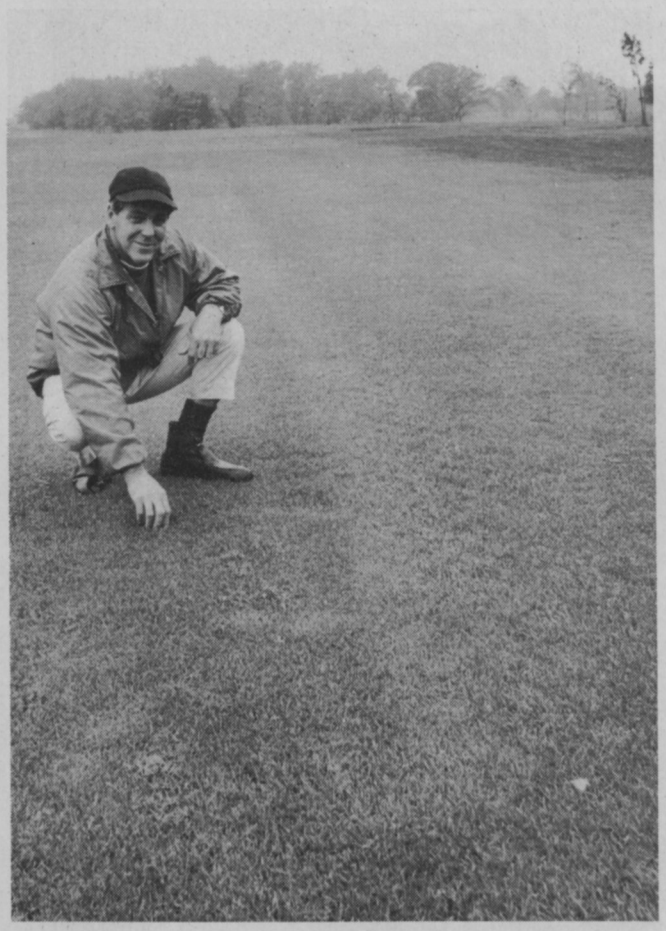
WEEVIL WORRIES *(from page 18)*

sprayed on every two weeks to control chinch bugs and other problem insects while Santoianni prefers Diazinon granules to control hyperodes weevils.

Dr. Haruo Tashiro, Cornell professor of entomology at the New York State Experiment Station, Geneva, points out that the threat of the hyperodes weevil has been recognized only in recent years. Two applications of Diazinon give good results, he says, and cites mid-April and mid-May as optium dates for application.



John Roma manages the course for Harbor Hills Country Club, Port Jefferson, N.Y. He keeps turf pests in check with Diazinon. Note the healthy stand of turf on this fairway. Effective chemical control of insects takes much of the worry out of the job.

"We know now that the weevil pest causes a great deal of damage," Dr. Tashiro comments, "but it can be effectively controlled with chemical treatments. Much of what was thought to be damage from hot summer weather is now being blamed on the hyperodes weevil. Diazinon has recently been labelled in New York for control of the problem," he adds.

The larval stage is the time to get control of the weevils, superintendents agree. The pest should be killed while still in the first eating stage. Control is more difficult if weevils are left alone beyond that stage.

Cornell research indicates there is one complete spring generation of hyperodes weevil and in some cases at least a second partial late summer generation. Eggs are first laid in April and May, developing to adults in about two months, from as early as late April to late June. Eggs of the second generation are usually laid during July and August.

Many superintendents also agree that aprons need just as careful insecticide treatments as the greens receive, since they often get almost as much fertilizer. The weevil seems more of a problem on well-fertilized areas, they point out.

John Roma, superintendent of Harbor Hills Country Club, Port Jefferson, New York, has found later applications seem to do the best job. He applied Diazinon twice, first in late May and again in late July, once weather turns dry.

A wide variety of grass is found at this course, but Poa annua is there, too. Roma says he's found liquid and granular Diazinon serve most of his needs; and chlordane is employed as well.

"This course is in excellent conditon," Roma says, "and the main reason has been effective chemical control of insects pests."

Other problems exist in this area, too, he says. Chinch bugs have been his primary worry aside from weevils. Cutworms and June bugs also present problems, but chemical control is usually good on these pests.

Author (r) discusses Kingstown Velvet Bentgrass performance at Melody Hill Golf Course with Charles Mandeville, course superintendent. Golfers find the turfgrass especially true for those critical putts.

VELVET BENTGRASS *(from page 20)*

As with any golf green bentgrass, Kingstown should be mowed frequently, at least every other day at the height of the growing season. Mowing is customarily 3/16-¼ inch tall for golf greens, a bit taller for lawns.

The grass should receive moderate, steady fertilization such as with slow-release ureaform products. A complete fertilizer containing about a half pound of nitrogen is suggested each few weeks, totaling three or four pounds of nitrogen annually. Light liming may help with thatch breakdown, but be careful to hold pH well on the acid side.

MANAGEMENT PRACTICES

Disease and pest damage is apt to be superficial, but precautionary fungicidal sprayings should be undertaken with Kingstown the same as with any high quality golf green turf. Recommended rates should be carefully observed in applying chemicals to control disease.

Thatch is controllable by the usual practices or aerification, moderate fertilization and top-dressing (top-dress lightly and work the material into the grass, not always easy with so tight a turf).

Irrigation will be required if rainfall is not sufficient to supply about an inch of moisture each week during the growing season.

Melody Hill Golf Course, Harmony. Rhode Island, (pictured in the accompanying photographs) affords a specific case history of the use of Kingstown velvet bentgrass.

Melody Hill greens were seeded to Kingstown six years ago, and have proven eminently satisfactory. When time for Melody Hill expansion arrived, Charles Mandeville, owner and superintendent, insisted that the nine new greens be seeded to Kingstown. This was in spite of the more or less automatic inclusion of another bentgrass in architectural specifications.

Melody Hill greens are mowed at one-quarter inch three times weekly. They are aerified annually, in the autumn, and are lightly top-dressed, approximately on a monthly basis. Even in exceptionally dry summers the greens are watered only once per week. Fungicides are applied only when disease is clearly a threat.

When visiting the Melody Hill golf course in August the greens were outstandingly beautiful. Mandeville assured us that this is the case most of the time. He concludes, "I highly recommend this greens grass — if you question its performance, ask the golfers — they will tell you how true the greens putt."

This is the ninth hole at Melody Hill. Even from this distance, it's easy to see the outstanding putting surface. The uniform, fine-texture of Kingstown makes a turf that virtually free of graininess.

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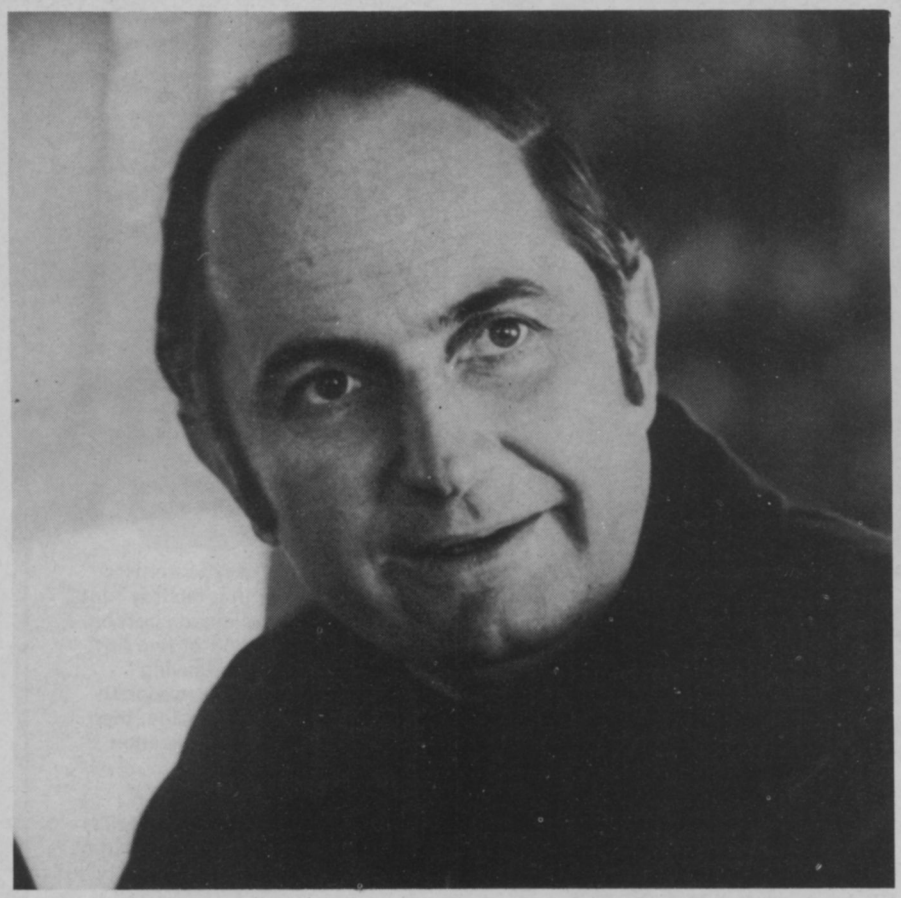


Tony Caranci, superintendent, Ledgemont Country Club.

TURF MANAGEMENT *(from page 14)*

added to the course. They are used to "screen out walking people and the skyline." These barriers also protect golfers from stray balls. Trees are also planted around greens to frame them for the benefit of the approaching golfer.

With an average of 30,000 rounds annually, the tees need to be large enough "to hold a good stand of turfgrass". Almost all tees have been reconstructed and made larger. They were seeded to good permanent strains of grass such as Merion Kentucky Bluegrass and fescue mixtures.

The irrigation system was already underway when Tony took over the Ledgemont course. An underground manual quick compling system, it was designed to handle the irrigation for tees, fairways, and greens.

The fairways had to be started from scratch to get rid of annual bluegrass Poa *annua*. And in his usual concern for the membership, Tony presented three plans, "One was to completely kill off all grasses and reseed. The second plan was to kill one-half of the fairway at a time and reseed, leaving the other half for play. The third plan was chosen which was to annually overseed with permanent strains of grass seed. Fairways are now a balanced mixture of desirable bluegrasses and fescues.

Consulting the membership for guidance with long-range plans is still a part of the "Caranci management practices". For instance, this season one-half of the practice putting green has been seeded with Kingston Velvet Bent and the other half with Penncross Bent. The membership will now vote on which grass provides them the best putting surface.

"Having participated in the choice, the membership will cooperate better while we develop better putting greens," comments Tony.

Once the greens, tees, and fairways are constructed properly, the good permanent grasses are established, and the landscape revolves around its seasonal beauty, the job becomes one of keeping the course that way. And, Tony Caranci is an expert in the cultural, mechanical, and chemical practices needed to do the job.

As a visiting instructor to the University of Rhode Island, Tony tells the students, "the practicing golf course superintendent must have a well-rounded knowledge in many fields. Not only is he a business manager, personnel administrator, purchasing agent, contractor, and mechanic, but he has to know about such subjects as grass nutrition, plant pathology, entomology, weed control, irrigation, public relations, ecology, and landscaping."

Tony's knowledge of these latter subjects enables him to produce fine fairway turf that will withstand regular mowing at ½ inch to ⅞ inch. This turfgrass also has to be tolerant to summer heat and humidity. It has to withstand disease and mechanical wear. And Tony insists that fairway turf has to do all this "while staying firm enough to hold the ball up and still not become mated or puffy."

"The fundamental need of grass that is growing and constantly being cut is plant food, and in the correct amount for the particular strain of grass.

"Our fairways annually received 3 pounds of nitrogen per 1,000 square feet. Since timing is important, 400 pounds per acre of balanced fertilizer (1 pound of N) per 1000 square feet are applied in the spring and 800 pounds per acre in the fall.

"We've also learned to apply about one-half of the 800 pounds in early September, leaving the balance for November application. The fairways look better all winter and get a better start in the spring."

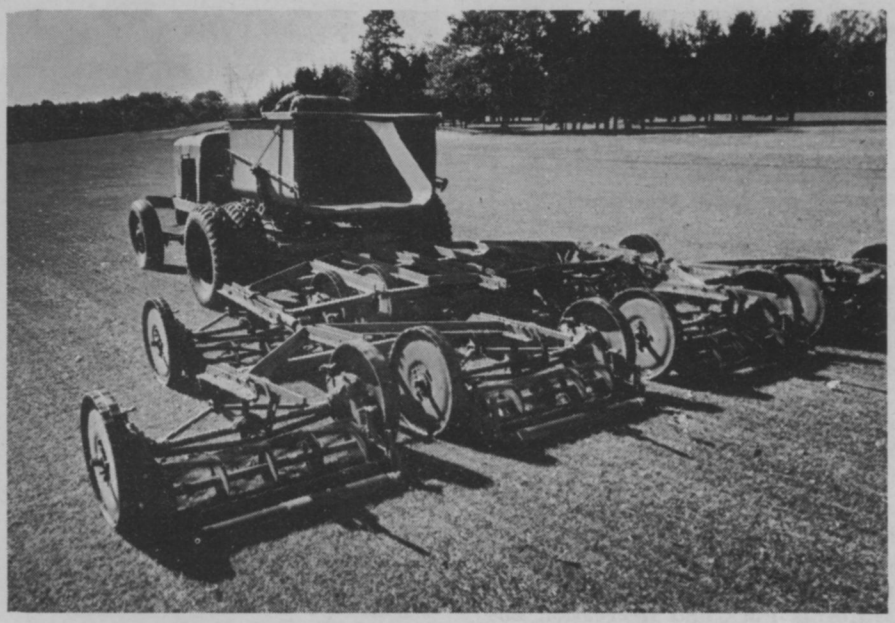
Tony has his general fertilizer custom mixed. Whether it's a 10-6-4 or a 20-5-10, the nitrogen sources are 75% organic with 50% from "Blue Chip" granular "Nitroform" and 25% from activated sewage sludge.

The 4-1-2 ratio is used when there is a need to cut the phosphorus supply to retard Poa *annua*.

Tony runs his own tests under field experience before specifying a mix. "I had my first encounter with "Nitroform" way back in the fall of 1957; and, I pioneered in finding a manufacturer who would be willing to use it in my custom mix. Regardless of whom I now buy from, I still specify the 75% organic product."

"The results on my fairways were so outstanding that after a golf superintendent conference here at our club, other superintendents started specifying the same mix. And many are still using it today."

Tony doesn't hesitate to explain why he likes this 75% organic formula. "The 'Nitroform' has a built-in release which gives the uniform growth needed on today's irrigated fairways and tees. The sludge acts as a good soil conditioner for this clay soil and supplies trace elements along with some of the nitrogen. The



Fairways are aerified twice a year. Caranci uses a slicer in the fall and overseeds at the same time. Here, new turfgrass is coming up in the cut made by the slicer. When the course opens for play in the spring the turf will be in top-notch condition.

wide use of irrigation has helped to create the need for these slow-release products. Even though I could have the labor to do the job with solubles, this combination is easy to use and results in even growth and color."

Other essentials in Tony's program for fairways include mowing a minimum of four times a week. This has mowers out every day in some

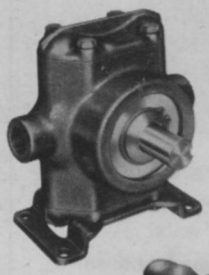
(continued on page 52)

A broadcast spreader is used to apply Caranci's prescription fertilizer mix. Fairways annually receive three pounds of nitrogen per thousand square feet. Nitroform ureaform fertilizer plus activated sewage sludge is used. The built-in release gives uniform growth needed on irrigated fairways and tees.

Hypro Pumps

for applying weed and turf chemicals

PISTON PUMPS



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10 gpm (at 600 rpm)
400 psi pressure
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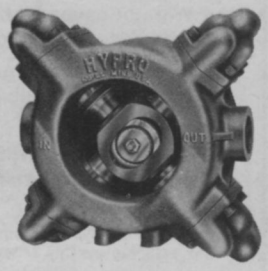

Series 5400 4-CYLINDER PUMP
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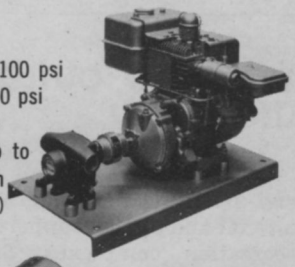
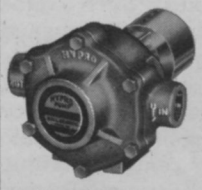
ROLLER PUMPS

Series GN6310R
6.9 gpm at 100 psi
5 gpm at 200 psi
3 hp engine
(develops up to 250 psi with 4-hp engine)





Series 7560 8-ROLLER PUMP
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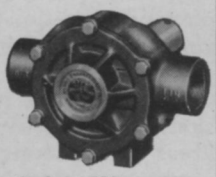
Pressure to 300 psi.



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Choice of rubber or nylon rollers

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1973 GOLF OUTLOOK

(from page 23)

Current emphasis on recreation and open space has created more official and citizen support for golf/-recreation complexes. Such complexes, in addition to a well designed golf course, often include tennis courts (sometimes lighted for night play), swimming pools, artificial ice skating rinks, playground and picnic areas, a community center building, camping, hiking, nature study and sometimes ski areas.

Congress has appropriated $181,-800,000 for use as possible matching grants to states and their cities and counties under the Bureau of Outdoor Recreation funding program for 1973. Apportionments for the individual 50 states range from $1,500,000 for Wyoming to $12,500,000 for California.

The Bureau of Outdoor Recreation (U.S. Dept. of Interior) makes grants from the Land and Water Conservation Fund to states and through them to political subdivisions for planning, land acquisition and development of public outdoor recreation areas and facilities including golf courses.

Alert communities are taking advantage of the BOR 50% matching grants and building needed public recreation complexes including golf courses. Some cities are purchasing existing facilities with the aid of BOR grants.

The city of Overland Park, Kansas, recently purchased the privately owned St. Andrews 18 hole golf course along with 122 adjacent acres which will be used as park land. The city will bear half the $1,077,200 cost of the site; the BOR authorized matching funds (grant) for the other half.

Recognizing the great need for more municipal golf courses in California, NGF recently co-sponsored two one-day seminars with the California Park and Recreation Society. The first, covering the southern half of California, was held at Los Angeles; the second, covering the northern section, was held in Monterey. Future seminars, similar in nature, are planned for other states interested in municipal golf development.

For further information on NFG services, contact any of the following: National headquarters; Don Rossi, Executive Director, 707 Merchandise Mart, Chicago, Ill. 60654; Regional headquarters: West Coast — Buddy Johnson, 833 Curlew Road, Livermore, California 94550; Southwest — George Kerr, 1102 Seminole Drive, Richardson, Texas 75080; South Central — Fred Stewart, 935 Rodney Drive, Nashville, Tennessee 37205; North Central — Larry Smith, national headquarters office; East Coast — Harry C. Eckhoff, 1500 Arlington Boulevard, Arlington, Va. 22209.

Northern Calif. Turfgrass Council Elects 1973 Officers

Tne Northern California Turfgrass Council has recently elected officers for 1973. They are: Keith Braman, Keith Braman & Associates, president; Paul Albright, Berger & Plate Seed Co., 1st vice president; Tony Ramirez, City of Concord, 2nd vice president; Jerry Boesel, RainBird Manufactuirng Co., sec-treas; Pasco Balzarini, City of Redwood City, director; and C. S. Sandhu, Sequoyah Country Club, director. Continuing Directors who will serve during 1973 are Ralph Evans, Cal-Turf; Grady Simril, East Bay Regional Parks and Chic Cannon, Aqua-Dial, immediate past president.

DED Injection System Reported To Ohio Arborists

Twenty-five local members and guests of the National Arborist Association met in Cleveland in early December.

Speaker for the evening dinner meeting was Dr. Winand K. Hock, research plant pathologist, Shade Tree & Ornamental Plants Laboratory, Delaware, Ohio. He reported on his research of vascular diseases of trees.

"Benomyl is one of the hottest fungicides to come along in the last 20 to 25 years," Hock said. "We have to consider benomyl as a leading candidate for Dutch Elm Disease. Our tests have shown that if we can get it into the tree, it will work."

Dr. Hock told the group that the current problem has been in solublizing benomyl. Several different chemicals have been tested. Lactic acid currently appears to be a good candidate.

The plant pathologist also reported on his experimental tests of injecting benomyl into diseased trees under high pressure. First he drilled one-half inch in diameter holes two and one-half inches into the tree trunk. Holes were spaced 10 to 12 inches apart around the tree. He then inserted a five-eighths inch lag bolt through which a hole had been bored into the one-half inch hold. Fittings were attached to the lag bolts and via hose, connected to a manifold. A pump then pumped solubilized benomyl with a maximum pressure of 300 psi into the trees.

Dr. Hock said that when the lag bolts were removed, holes were plugged with corks and the area sprayed with a tree wound dressing. No correlation was noted between the severity of DED and the amount of uptake of benomyl by the tree. Likewise, time of day and uptake were not charted in the test.

"Over 50 percent of the trees treated in our test nursery at Delaware (Ohio) were protected from DED with this injection treatment," says Hock. He feels this system, although experimental, offers the arborist an effective method of combating DED.

He also reported on the control of anthracnose in walnuts with foliar applications of Triarimol, an experimental compound from Elanco Products Company. Known as EL 273, this material appears to be an excellent material in controlling this disease, Hock concluded.

—insect report—

INSECTS OF ORNAMENTALS

CONIFER APHID
(Cinara canadensis)

VIRGINIA: Taken on juniper in Montgomery County July 6, 1972. This is a new state record.

CRAPEMYRTLE APHID
(Tinocallis kahawaluokalani)

MARYLAND: Very heavy and injurious to plant at Baltimore. Population included males, oviparous females, new eggs, and viviparous females. Sexual forms rare.

TREE INSECTS

BARK BEETLE
(Ips calligraphus)

ALABAMA: Population explosion killed 80-90 percent of 6 to 10-year-old pine plantings on ornamental area around livestock coliseum at Monroeville, Monroe County. Contributing factor may be large pulpwood yard located within 150 feet where salvaged wood stacked for shipment to mills.

ELM LEAF BEETLE
(Pyrrhalta luteola)

NEW MEXICO: Damage heavy to Siberian elms at Farmington, San Juan County.

VARIABLE OAKLEAF CATERPILLAR
(Heterocampa manteo)

OKLAHOMA: Heavy infestation on oaks in Bryan County declined. Fully grown larvae left trees in Payne County. ARKANSAS: Specimens submitted from Benton County. Much lighter in northwest area than farther south. Attacked by diseases and parasites in most areas. WEST VIRGINIA: Larval damage heavy on about 300 acres of scattered red and black oaks in Hardy County. OKLAHOMA: Larvae still common on oak trees in Robbers Cave State Park area, Latimer County, October 29.

HEMLOCK LOOPER
(Lambdina fiscellaria)

WEST VIRGINIA: Larvae caused heavy defoliation of one hemlock tree at Buckhannon, Upshur County. This is a new county record. Larvae caused 75 percent defoliation of hemlocks in 3-acre area in Hancock County October 5.

DOUGLAS FIR TUSSOCK MOTH
(Hemerocampa pseudotsugata)

NEW MEXICO: Heavy populations caused defoliation of Douglas-fir in Los Alamos, Los Alamos County. Light populations caused some defoliation of spruce and fir in Santa Fe, Santa Fe County.

BENEFICIAL INSECTS

FLEA BEETLE
(Longitarsus jacobaeae)

WASHINGTON: About 500 adults released on tansy ragwort November 9 near Battle Ground, Clark County. OREGON: Released 500 adults on tansy ragwort rosettes on state land in western Marion County, November 9.

ENCYRTID WASP
(Ooencyrtus kuwanai)

RHODE ISLAND: Released 60,000 against *Porthetria dispar* (gypsy moth) eggs in Providence County October 3.

SAGE WEEVIL
(Phrydiuchus tau)

OREGON: Total of 448 adults from Yugoslavia released on Mediterranean sage, *Salvia aethiops,* in Lakeview area, Lake County, November 2, 1972. Few live adults observed in July 1972 at two 1971 release sites south and west of Lakeview, indicating successful completion of one life cycle.

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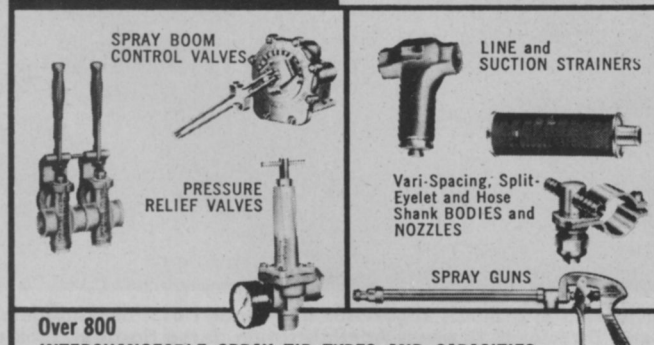

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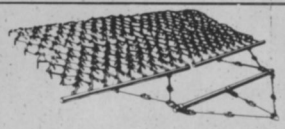

Maintenance-free Fuerst F-l-e-x-i-b-l-e Tine Harrows® are low in cost, yet have so many uses. Adjust easily for turf revitalization, seedbed preparation, working in seed and fertilizer, collecting trash in parks, on beaches and roadways, smoothing road shoulders and many more jobs. From the first tine to the last, Fuerst is first. Write today for our low prices.

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David Liddle, grounds supervisor at Friends Hospital, Philadelphia, and G. Nelson Watts, Director of Business Administration at the Hospital, look over Elm tree designated a historic landmark. The tree was planted during the 1800's, and was certified by the Elm Research Institute of Waldwick, N.J.

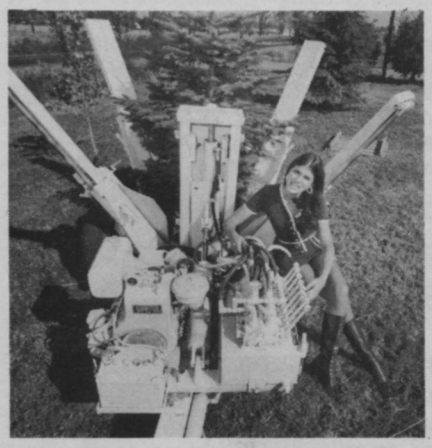
FIRST PRIZE—A floor display of its walk-behind lawn mowers has won top honors in its category in the 13th annual Merchandising Awards Contest for Bolens Division of FMC Corporation, Port Washington. The contest, sponsored by the Point-of-Purchase Advertising Institute selected 38 winners from the more than 1500 entries covering the gamut of point-of-purchase advertising. The display, entered in the Building and Garden Supply section, was created by The Howard Company, Inc., of Elm Grove. David J. Jones (l) of The Howard Company, and Richard Mowry, product manager for Bolens, were co-recipients of the award.

PRESIDING "DEAR ABBY" — Robert Chakales of Richmond, Va., president of the Golf Course Builders of America, will chair the 2nd Annual Dinner of the Association's program January 9 in Boston and will moderate a "Dear Abby for Builders" group discussion. The GCBA meeting will be held during the Golf Course Superintendents' convention.

Green Industry Newsmakers

PEOPLE PLACES EVENTS

PLANNING — AAN Convention Committee Chairman Larry W. Bachman, Bachman's Inc., Minneapolis, Minnesota, reviews plans for the July 14-18 meeting at the Radisson Hotel in Minneapolis next year. With Mr. Bachman in the Washington offices of the American Association of Nurserymen are: (left to right) Robert F. Lederer, AAN Executive Vice President; Robert D. Doyle, Associate Manager; and Leo Donahue, Administrator. Early plans announced for the 98th Annual AAN Convention promise more information, more special events, more excitement, more enjoyment — more of everything nursery industry families have been asking for.



DIG THIS — Lovely Melanie McClain, "Miss Northwest Ag Show," sits at the controls of this Vermeer Tree Spade, which will be on display at the January 30, 31 and February 1 show in Portland, Oregon. Over 100,000 square feet of machinery and supplies will be exhibited at the fourth annual trade show at Portland's Memorial Coliseum.

Dacthal® drives 20 annual weeds off the course with one easy swing.

One application early in the spring. That's all it takes. Dacthal preemergence herbicide prevents 20 annual weeds from sprouting all season long. Problem weeds like carpetweed, chickweed, purslane and others. So you can devote time and manpower to more important work.

Dacthal doesn't stop there. It also drives out troublesome crabgrass and *Poa annua*. Hit'em in the spring. And follow through with Dacthal in late summer for control of *Poa annua* and other late-germinating weeds.

Over the years, Dacthal has proven to be the closest thing to worry-free weed control. It won't harm new grass when used as directed. Won't leach out with frequent waterings. And there's no problem of residue buildup in the soil.

TOTAL TURF CARE

Dacthal degrades, naturally, in one season. Just read and follow label directions.

You can even use Dacthal to keep the weeds out of flowers and shrubs. It's cleared for use on over 120 ornamentals. That's one more beauty of it.

This year, drive out weeds with Dacthal... the all-around favorite preemergence herbicide. Available in wettable powder or granules. Ask your supplier for more information or write: Agricultural Chemicals Division, Diamond Shamrock Chemical Company, 1100 Superior Avenue, Cleveland OH 44114.

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WIPE OUT SOD WEB-WORMS

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Easy-to-use formulation mixes with water; doesn't corrode sprayers.

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Golf Green Construction Investigated By Two Texans

It costs more to construct, maintain and eventually replace good golf greens these days. This simple economic fact of life has led two Texas A & M University agronomists, K. W. Brown and R. W. Duble, to investigate and reevaluate the characteristics of golf green construction with an eye to making it better, but less expensive. Brown described the investigation and its results at the annual meetings of the American Society of Agronomy in Miami Beach.

Ideally, greens should have the contrasting properties of having high infiltration rates to prevent ponding, and have sufficient moisture storage capacity to supply the turf for a day or two without reirrigation. The green surface must also be firm even when wet, but may not be too hard.

Brown and Duble found that such properties could be obtained by construction a green of a 4-inch layer of pea gravel topped with a 12-inch layer of a mixture of 85% sand, 10% peat moss and 5% soil.

The gravel layer is used to allow rapid drainage when water must be removed, but it also acts to slow drainage after the initial free water has been removed. Such greens would also have a significant capacity to store fertilizer nutrients, thus decreasing the requirement for expensive fertilizers.

As a result of their research Brown and Duble hase rewritten the golf green construction specifications used by the United States Golf Association.

River Bed Sediments Hold Mercury Pollution Key

Mercury pollution has played a major role in creating public concern for the pollution of streams and lakes in the U.S. The real danger, of course, occurs when toxic mercury compounds such as methyl mercury enter into the food chain and are ultimately consumed by people.

Since methyl mercury is not the form of mercury normally discharged by industry, but is the form found in fish and is highly toxic to humans, studies have been made by soil scientist Lee W. Jacobs of the University of Wisconsin to determine the posibility of mercury methylation by organisms present in sediment.

An experiment was established in each of two Wisconsin rivers of different water quality and sediment, but with similar histories of discharges from paper mills and a chlor-alkali plant. Preliminary results show that some mercury is lost from sediments and that methyl mercury is produced in sediments containing high concentrations of mercury salts.

Once researchers know to what extent methyl mercury is formed in sediments and what factors favor this formation, they will be better able to determine ways of preventing the production of methyl mercury from the storehouse of mercury compounds already present in U. S. waterways. The final result should be the elimination of methyl mercury from the food chain.

Sprinkler Irrigation Conf. Slated Feb. 18-20 In Dallas

The role of the sprinkler irrigation industry in the next twenty years will serve as the focal point for the 1973 Sprinkler Irrigation Technical Conference.

The meeting, to be held on February 18-20 at the Fairmont Hotel in Dallas, Texas, will deal heavily with the opportunities, problems and challenges in the field of waste products control through sprinkler irrigation as well as with subjects of a more general nature in both agriculture and turf.

The program, developed under the chairmanship of Tom Lyndon, Jr., contains an impressive list of speakers from government agencies, universities and the sprinkler irrigation industry. Keynote addresses will be delivered on successive days by Belford Seabrook of the Environmental Protection Agency and Jack Thompson of the U.S. Corps of Engineers. Other speakers will come from nine states and one foreign country.

For the first time in history, the meeting will be co-sponsored by another group, the Texas Turf Irrigation Association. The TTIA has met with members of the SIA in planning the conference and will serve an integral role at the meeting, acting as hosts at the conference.

The Dallas meeting is also the first time in many years that the Conference has been moved out of the western area and is the first trial effort by the SIA to bring its meetings to different areas of the country, thus promoting attendance on the part of those unable to travel long distances to attend.

Poa Annua In Bermudagrass? Try Kreb Herbicide

Rohm and Haas Company has announced that Kerb 50W herbicide is now recommended for the control of annual bluegrass (poa annua) in bermudagrass turf in the southern tier of states from the Atlantic to the Pacific.

Throughout the years poa annual has been a constant threat to golf courses by impairing the attractiveness and efficiency of the widely used bermudagrass turf. Kerb is effective either as a preemergence or post emergence spray. Its preemergence activity will control poa annua germinating after the initial postemergence application.

Kerb also offers wide latitude as to timing of application. On bermudagrass it can be used safely on dormant or growing grass. It can be applied at any growing stage from germination through seed maturity.

Golf superintendents and grounds keepers who have tested Kerb on numerous golf courses report good control of poa annual.

ARBORIST SHOP TALK

By Hank Harvey Jr.
Rutledge, Pennsylvania

Winter Survival Kit For Business

Well, it's snowy white outside and cold as the arctic so you're just going to throw another log in the fire and read some old magazines or turn on the T.V. or get back in bed next to somethng warm, right?

Wrong!

Just because the weather is bad doesn't mean the day has to be an unprofitable one. In fact, those shut-in days should be looked on as a welcome opportunity to catch up on old business. Such as what?

Well try any of the following:

Follow Up On Job Leads: Remember that neighbor Mrs. Jones said wanted to see you but you didn't have time? What **was** her name? Call up Mrs. Jones, get the name and call the neighbor to see if she still needs your services, when the weather breaks of course. Or that customer who said come back and do such and such in a couple of months. Good time to call and firm up that job and when you can do it. A couple of hours making phone calls to hot leads should drum up a number of new jobs.

Collecting: Next, call up those "slow-pays" and remind them in a friendly way that you've been looking for their check and perhaps you could stop over today and pick it up. Any time you can collect payment on old accounts it's worth going out even in foul weather to get it done. And don't worry about calling to **ask** for your money. You're not asking for anything you didn't earn. Remember, too, every day that goes by, your chances of ever collecting an old debt decrease and you can be sure that your continued patience and silence will in no way expediate payment.

Customer File: Remember that up-to-date complete customer file you always wanted to make? Why not start it next time you're rained out or snowed in? All you need is a stack of index cards (preferably the big 4" x 6" kind) and a cheapie file box. Gather up all those scattered scraps of papers and little note books with customer names, phone number, etc. on them. Write the name at the top left (last name first) with address and phone below it. Then write down whatever information you have or can remember about what you did, when you did it, how much you charged, etc. *Then keep it ever handy and always up to date.* Sure it takes time to get the customer file started, but they're valuable to have. On those otherwise worthless days you have time to spare, use it!

Tools and Supplies Check: It may be too cold or damp out in the shop to stay there very long but then it doesn't take very long to check out what needs to be fixed, what parts are needed to do the fixing, and what supplies are getting low. (Take your pen and note pad out with you so you don't forget what you need.) A few min. in the shop and a few on the phone may save you precious hours that could be otherwise wasted when you got on a job without the supplies you need, or with a tool that didn't work. Sometimes getting the right part to fix a tool can be as time consuming as the repair itself. So by consolidating several trips into one you are saving yourself lots of time . . . and money.

Even if the weather is severe there are jobs such as tool cleaning, sharpening, lubrications, etc. which can be done in short periods of time. And in many cases could be brought inside to a warm cellar if your shop or garage is not heated.

So now that you know what you can do with yourself when you can't work outside, next time the weather is lousy, cheer up and get busy!

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For More Details Circle (117) on Reply Card

EDITORIAL *(from page 9)*

state publish a "Rules For Applicators" booklet similar to those published by auto licensing bureaus. The candiate could then study the rules, chemical uses or other pertinent data and be better prepared to take an examination. If there is doubt as to experience, a practical spraying test could be devised.

We commend the professional applicator for his patience. The authority granted the Environmental Protection Agency in developing training programs is now official. Help for the applicator is on the way.

AN INCREDIBLE NEW WAY TO FEED TREES!

Jobe's Tree Food Spikes

Pound these spikes of high-analysis 16-8-8 fertilizer into the ground around trees, and rain does the rest. **"Nearly three times faster** than drilling," states a leading university. Write us for details plus the university report.

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For More Details Circle (140) on Reply Card

Seedsmen Convention Boasts Record Crowd

Speakers for the 20th annual convention included: (l-r) Dr. Herbert Cole, Jr., Penn State University; Ronald Gianettino, vice president, Keyes-Martin & Co.; and, Dr. Kenyon T. Payne, professor crop and soil sciences, Michigan State University.

Over 80 members and guests constituted a record attendance when the Atlantic Seedsmen's Association, combined with the meeting of the Lawn Seed Division of the American Seed Trade Association met in New York City in November for the 20th annual convention.

The traditional "Round Table," now grown into a horse-shoe due to increased attendance, was well attended. The following morning the Annual Meeting of the Atlantic Seedsmen's Association was opened by President Peter Loft.

The first order of business consisted of introduction of guests and the identification of members in attendance. A minute of silence was then observed in memory of Bill Burpee.

Committee reports began with William Herron as chairman of the legislative committee. Seed control officials were very cooperative in reporting any changes in the State Seed Laws. Brief reports were given by Russ Billings, chairman of the farm seed committee, who commented on the world-wide shortage of farm seed; and by John Vaughan, chairman of the garden seed committee, who had more optimistic remarks.

The following officers were elected to serve for the following year: New officers elected for 1973 include: William L. Jeffers, Oliger Seed Co., pres.; William A. Feury, The Terre Co., 1st vice-pres.; George A. Beans, Stanford Seed Co., 2nd vice-pres.; Alvin M. Sweeney, Sweeney Seed Co., secretary; and J. S. Newsom, F. W. Bolgiano & Co., treas. Peter S. Loft of Loft-Pedigreed Seed, Inc. becomes a member of the executive committee. Two additional members were elected: William Herron, Stanford Seed Co. and George Wagner, Garfield-Williamson & Co. Margaret Herbst of New York remain as executive secretary.

Peter Loft presented observations in the trade during 1972. He particularly mentioned the general trend for more consumption of seed of all kinds and the many more proprietary seeds that will be sold.

John Vaughan, a member of the review committee on grants, then presented the recommendations of his committee for contributions. The Grants were approved to: American Seed Research Foundation, Better Lawn & Turf Institute, National Garden Bureau, Farm Seed Conference and the National Lawn & Garden Week newspaper supplement.

Peter Loft, also chairman of the seed specification committee, reported on an excellent acceptance of the revised specifications and their wide distribution.

Robert A. Russell of J. & L. Adikes reported on the progress of the discussions with regard to seed labelling that were being held with the various seed control officials during the convention. Just before luncheon, the new president, William Jeffers, assumed the chair and presented the past president plaque to Peter Loft.

Dr. Herbert Cole, Jr., professor of plant pathology, Pennsylvania State University, presented the case for chemical seed treatment. He looked

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upon chemical seed treatment as an opportunity rather than a problem. With the use of slides, he illustrated the different turfgrass problems and stressed the need of genetic diversity as one solution to these problems.

The second speaker was Prof. Kenyon T. Payne, dept. of crops and soil science, Michigan State University. Payne gave some aspects of turfgrass needs; he chose to approach his subject in several areas: the grasses themselves; seed and its production and distribution; education; industry and environment.

Ronald Gianettino, vice-president of Keyes, Martin & Co. advertising agency concluded the session with a presentation on the marketing and advertising of seeds, past, present and future.

The next morning conferees heard reports from the West given by Arnie Bonnicksen, Arden Jacklin and Alan Hick before the Lawn Seed Division meeting opened, presided over by chairman John Vaughan.

Robert A. Russell gave a more complete report on the seed labelling discussions with seed control officials. Alan Hick covered the topics that had been brought out in the Planning Committee session. James Jenks spoke on the highway specifications problems in Virginia and Maryland. Doyle Jacklin reported on the noxious weeds list; as a result, a recommendation was passed to have a committee to look over these various lists.

Arden Jacklin's discussion resulted in a resolution to be sent to the board of directors of A.S.T.A. to get a legal opinion on the protection of Kentucky bluegrasses under the Plant Variety Protection Act and/or the Plant Patent Act. Doyle Jacklin submitted a resolution designed to codify existing seed testing research on varietal and identification information.

The speaker for the Lawn Seed Division was Dr. Roy Nittler, N.Y. Dept. of Seed Investigations, Geneva, New York. He discussed new seed testing techniques and their application of variety differentiation.

Optimum Nitrogen Rates Cited As Major Sod Problem

An Ohio State University agronomist has cited application of optimum rates of nitrogen fertilizer as a major problem facing the sod grower today.

K. R. English says that because sod is used to establish many new turfgrass areas, large sod fields must be carefully managed to produce a top quality crop which can be used in laying a new site. Poorly developed sod will fall apart and establish slowly. Insufficient nitrogen produces a weak, thin turf which allows weeds to move in and take over. Conversely, too heavy nitrogen applications cause excessive top growth and weakened root and rhizome systems.

Speaking before the annual American Society of Agronomy recently, English added that a study conducted at Michigan State University considered several ways to decide how much nitrogen the sod grower should use for efficient sod production.

Ammonium nitrate was applied several times at various rates during the growing season to Merion Kentucky bluegrass grown on an organic soil in Michigan.

Increasing the rate of nitrogen applied increased clipping yields which would necessitate more frequent mowing. Excessive nitrogen rates—60 pounds nitrogen per acre per month or more—gave less root

(continued on page 47)

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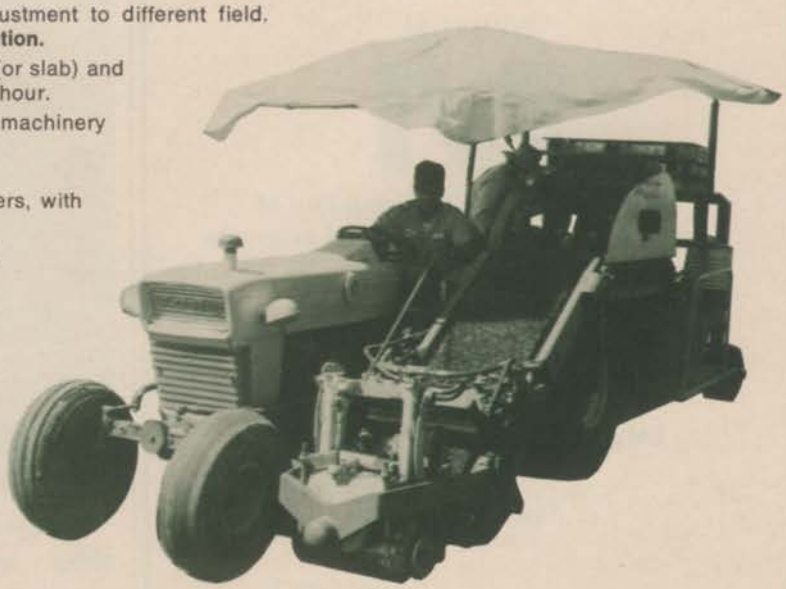

For More Details Circle (138) on Reply Card

Assoc. Landscape Contractors Plan Jan. 22-26 Meeting

Nearly 500 landscape contractors, their wives, guests and suppliers will gather in Miami, Florida, January 22-26, 1973, for the 11th Annual Meeting of the Associated Landscape Contractors of America (ALCA) at which President Norman Gray of Mansfield, Mass., will preside.

"Solving the Management Maze" is the theme of the five-day conclave which will be held at the Doral Country Club and Hotel. Registration will begin January 22.

ALCA's Trade Exhibit will be held January 23, 1972 (in conjunction with the convention) also at the Doral. The show promises to be one of the best ever staged by the Association. It will offer landscape contractors the opportunity to view goods and services to assist them in running profitable landscape contracting operations.

Elected to head the Sprinkler Irrigation Association for the coming year are: (l-r) A. W. (Tony) LaFetra, Rain-Bird Manufacturing Co., Glendora, Calif., treas.; Milton L. Rawson, E. C. Olsen Co., Ogden, Utah, president; John H. Stevens, Pierce Corporation, Eugene, Ore., vice-president. The association recently completed its 23rd annual convention in Monterey, Calif. This year's meeting will be in Mexico City, Mexico. The organization has 325 members nationwide.

Brazilian Honey Bee Pirates American Bee Life

An aggressive and ferocious strain of honey bee that has spread rapidly after becoming established in Brazil in 1957 could migrate to North America and become a serious public nuisance and a major problem to the beekeeping industry, according to findings in a study sponsored by the U.S. Department of Agriculture.

The most noteworthy characteristic of the Brazilian bee is its aggressiveness. Not only does it readily attack intruders, but it is aggressive in other ways. For example, it occasionally takes over the hives of other bees; it forages so aggressively that strains formerly kept by commercial beekeepers can't compete and have disappeared in areas where the aggressive strain has appeared. The aggressive strain also leaves managed hives readily to migrate long distances.

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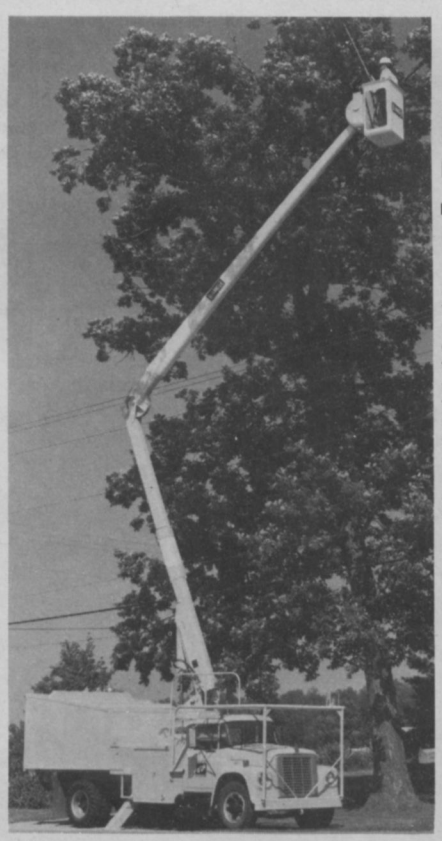

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For More Details Circle (137) on Reply Card

Dr. Robert W. Toler, (c) associate professor of plant pathology with the Texas Agricultural Experiment Station and Department of Plant Sciences at Texas A&M University, receives the Distinguished Service Award. F. J. Milberger of Bay City, association president, (r) makes the presentation. Looking on is Dr. David Rosberg, head of the plant sciences department.

Texas Sod Producers Honor A&M Pathologist

The Texas Sod Producers Association has honored an assocciate professor of plant pathology at Texas A&M University with a Distinguished Service Award.

Dr. Robert W. Toler received the award at the annual meeting of the Texas Sod Producers Association in Corpus Christi recently. He was honored with a plaque upon which was inscribed: "In recognition of his outstanding research accomplishments in the control of St. Augustine Decline disease and the significant contribution of his research efforts to the Commercial Sod Producing Industry of Texas.

Toler, who specializes in virus diseases, was leader of the project work which recently uncovered a new variety of St. Augustine grass that has resistance to SAD (St. Augustine Decline), a virus disease. The new variety has been jointly released by the agricultural experiment stations of Texas and Florida and is called Floratam.

Dr. Toler joined the Texas A&M staff in March, 1966. Before coming to Texas he was stationed in Georgia as a plant pathologist with the Agricultural Research Service, USDA. He is a native of De Witt, Arkansas and holds degrees from the University of Arkansas and North Carolina State University.

MAJOR SOD PROBLEM *(from page 45)*

and rhizome growth. This means weaker sod and slower sod development, thereby decreasing production efficiency, English said. On this organic soil, some nitrogen—at least 15 pounds nitrogen per acre per month—was needed for good sod.

Timing of nitrogen application was very important. Discontinuing or reducing nitrogen applications during the hot summer months gave stronger, more mature sod in the fall of the year. Heavy nitrogen applications should definitely be avoided during the summer months, he emphasized.

English also pointed out that clipping yields ranged from a low of 0.25 ton dry weight per acre from the unfertilized plot for the year to a high of 4.25 tons per acre on the plot receiving 120 pounds nitrogen per acre per month.

He said that as the rate of nitrogen applied was increased, the nitrogen content in the clippings increased to a maximum of 6.1 percent. Sod which received lower nitrogen rates gave generally faster rerooting into new soil.

Nitrate levels in the soil increase with the heavy nitrogen treatments, but due to variability the use of soil nitrate tests did not prove to be a useful tool to predict the nitrogen needs for sod.

The agronomist added that there was a general increase in soil nitrate levels during the season, indicating that nitrogen was being released by soil microorganisms at warmer soil temperatures.

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Plictran Miticide Registered By EPA

Plictran 50W miticide has been registered by the Environmental Protection Agency for use on ornamentals.

The product may be used in intergrated mite control programs. It causes little harm to predatory mites and insects and is essentially nontoxic to honeybees.

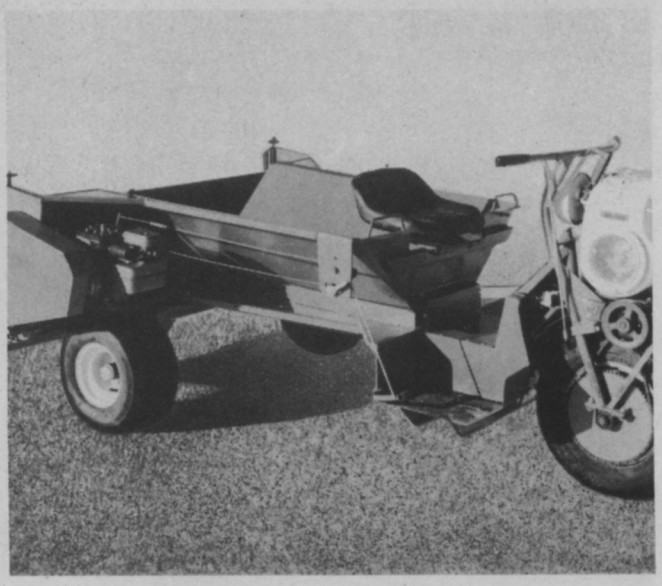
Plictran is compatible with commonly used insecticides and fungicides recommended in ornamental plant spray programs. It is a wettable powder formulation that mixes easily with water and can be applied through conventional equipment. Tricyclohexyltin is the active ingredient.

The ornmentals included in the Federal registration are greenhouse-grown carnations, chrysanthemums, poinsettias and roses.

More than 77 percent of WTT readers use mowers commercially in their business or service operation

MINI-KART: Leisure Labor Savers, Philadelphia, Pa.

Easily move objects up to 300 lbs. with this two-wheel cart. Handle bulky and heavy loads. Mini-Kart is designed to put the weight on the wheels, not on the back or arm muscles. Unit has a 30 inch by 18 inch painted ⅜ inch plywood platform for maximum strength and is protected by a wrap-around nylon channel. It has two heavy-duty 8¼ inch by 2¾ inch semi-pneumatic wide track tires for easy movement on sandy or soft soil. All metal parts are fabricated out of high quality steel and plated to resist rusting. Total weight is 22 pounds. For more details, circle (701) on the reply card.



TOP RIDER: Smithco, Inc., Wayne, Pa.

This top dresser has a capacity of approximately 16 cubic feet. And it spreads a five foot wide swatch three times faster than any other top dresser. Unit is foot controlled. According to the manufacturer, it is the only riding top dresser for golf course greens presently on the market. The unit is easily attached to the power head which is interchangeable with other Smithco products. For more details, circle (702) on the reply card.

QT-16 TRACTOR: Bolens Division, FMC Corporation, Port Washington, Wisc.

Here's a tractor with the projected noise ordinance standards built into the design. It's a twin cylinder 16 Hp opposed engine tractor that was engineered to run quietly and smoothly. It is reported to be the quietest and most vibration free tractor in its class. Unit features hydrostatic foot-pedal control, with variable forward speeds. The eccentric power-locking collar for attachment drive provides quicker, easier connection for all powered accessories without the use of belts. Standard features include hydraulic lift, front and rear light, side reflectors, electric start, enclosed engine and electric clutch. For more details, circle (703) on the reply card.

METE-R-MATIC: Jacobsen Manufacturing Company, Racine, Wisc.

Model F-9 truck-mounted top dresser features an increased hopper capacity of 13½ cubic feet and a rotating brush for deep distribution. Mounted on a Model 12 truck, the unit is capable of dressing a 36-inch wide swath at speeds of up to 4 mph. Equipped with a drag mat, machine can drag a 6 foot swath while top dressing. Unit can be reversed without backing into drag mat. Over-sized, low pressure tires and even weight distribution protect sensitive turf areas. For more details, circle (704) on the reply card.

GROUNDS TRACTOR: Deere & Co., Moline, Ill.

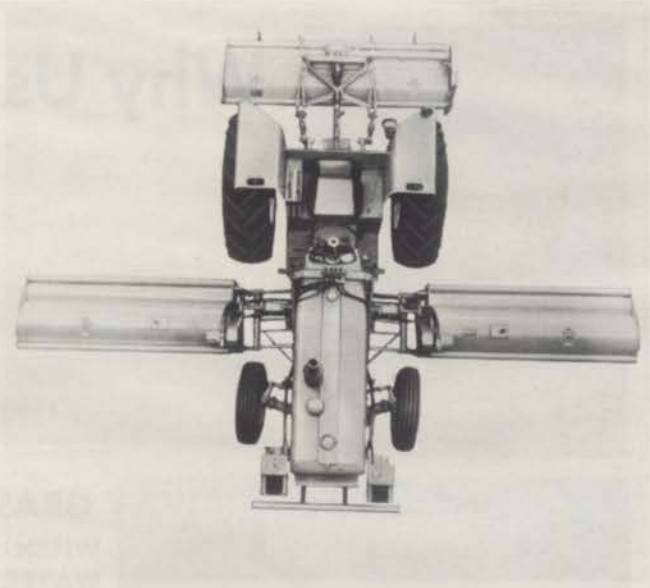
Model 820 diesel tractor is powered by a 31 Hp engine that packs a wallop into this compact machine. Tractor features eight forward speeds. Also has a three-point hitch, differential lock and 540 rpm PTO. There's a wide variety of equipment for the 820 including center- and rear-mounted rotary mowers, backhoe, snow blower, blades and rotary broom. For more details, circle (705) on the reply card.

HOT CLAMP, Dadco, Inc., Fresno, Calif.

The wet cell battery has one big disadvantage — corrosion on the terminal post. But now there is a terminal clamp that is guaranteed non-corrosive. Clamp features emergency release with no special tools required, cam action locking ring, 360 degree post contact, self-locking with no special lubrication and an un-restricted current flow. No steel bolts, plates or strengthening rings are used to attract acid. For more details, circle (706) on the reply card.

18 HP AUTOMATIC: Wheel Horse Products, Inc., South Bend, Ind.

Totally new from the ground are describes this 18 Hp automatic, the biggest, boldest and most deluxe of the manufacturer's product line. Power packed with a twin cylinder, cast iron engine that provides high torque, smooth operation and minimum vibration under heavy working conditions, the tractor offers compactness and maneuverability to the user. New Tach-a-matic hitch system permits faster and easier attaching of mid- and front-mounted attachments without use of tools. Safety features include a three-way interlock system to prevent accidental starting of tractor when power driven attachments are engaged. For more details, circle (707) on the reply card.



INTERSTATER: Energy Manufacturing Co., Monticello, Iowa

Energy hydraulic cylinders are used to lift and tilt both side gangs in the Mott Interstater. The Mott is a heavy duty safety flail mowing system specially designed for use on highway rights-of-ways, airports, parks and other areas where large volume mowing is needed. Flat out, the full three gang combination mows a swath 18 feet 10 inches wide and sides flex to follow the contour of ditches, ridges and other areas. Energy cylinders can take daily abuse and come back for more. Their rugged construction keeps maintenance to a minimum. For more details, circle (708) on the reply card.

OSHA Security Checklist Developed By Chicago Firm

The Federal Government's hard-line follow up on the new Occupational Safety and Health Act (OSHA) was evident in a 12-month report just issued.

According to Charles Wessel, vice president of Interstate Service Corp. of Chicago, a Globe Security Co., the industrial community is feeling the impact of the Government's rapid and effective implementation of OSHA by what has probably become the busiest Review Commission in the country.

"More than 32,707 compliance inspections have been made," Wessel said, "covering about 29,500 establishments employing approximately 5.9 million workers."

"Although about 25% of the locations inspected were found to be basically in compliance with OSHA standards," he pointed out, "still there were 102,816 violations reported and 23,231 citations issued.

"The dollars it will cost the companies in penalties levied by OSHA regional directors have mounted to $2,291,147."

Wessell who heads the organization that has become one of the nation's top four security firms, said that the Federal Government's focus on a major problem in America today is both timely and imperative.

Interstate Service, with more than 80 years of experience in the industrial/commercial security field, is a leading proponent of the now popular theory, that safety and security indeed go hand in hand.

"Safety for an individual worker comes about only after safeguards have been undertaken," Wessel pointed out. "It is not enough that machinery is accident proof, and the materials the workers use be harmless; the employee and the equipment must be guarded by an effective safety and security program that systematically covers every weak point.

"Materials must be arranged to avoid the threat of fire, alarm systems must be designed to protect all vulnerable areas of an establishment, locking devices must be installed in such a way that the building is impregnable against outside vandals. The only way a company can be both safe and secure is to have a thorough-going program designed for their individual needs."

"One concern of the Government," Wessel explained, "and it is a proper one, is to overcome security and safety weakness before disaster occurs."

The ramifications to an individual company or firm, subject to the relatively new Government regulations under OSHA, are complex. Wessel suggested that firms gird themslves both in general knowledge of the Act and the specific application to their companies.

"The added stigma a company may receive now from non-compliance with a Government regulation is another reason for preventative measures," Wessel added. "The company's employee relations and its image to its stockbrokers and the public at large are all endangered by a lack of understanding of the Act and therefore a lack of obedience to the law."

To assist businesses of every description, large and small — new organizations and established firms —Interstate Service Corporation is offering consulting services on the Occupational Safety and Health Act. Interstate also has developed a detailed security check list that is available upon request. By using the check list, businessmen can effectively check their own security quotient and perhaps grasp a better reading on their safety requirements, Wessel stated.

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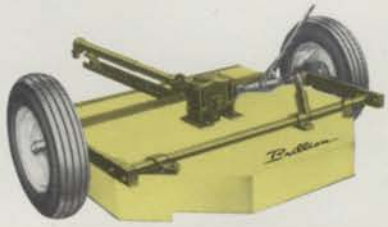

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These rugged Brillion tools make up a complete vegetation maintenance and control system. For soil preparation, seeding and mowing. On parkways or plant sites, public or private grounds. They get the work done quickly, in complete safety. And you'll find it easy staying within your grounds maintenance budget because repair bills just aren't a problem. Like all Brillion tools, these are built to do the toughest jobs, and keep on doing them year after year. Find out more. Send the coupon, or see your nearby Brillion dealer.

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Water was one of the early problems witih which Caranci had to cope. There was either too much on the surface or not enough to irrigate. This lake was constructed to supply water for irrigation on the course. It also serves as a hazard for golfers.

TURF MANAGEMENT *(from page 37)*

area. The cutting height for summer is ⅞ inch, for spring and fall ½ inch.

Every 4 to 5 years chlordane is used for grub control. Fungicides are used to prevent disease. Acti-dione ferrated, Thiram 75, 3336 systemic, cadmium chloride are among those that have been combined for broad-spectrum control on fairways during the growing seasons. Cadmium chloride is alternated with these fungicides during the growing season. It is also applied in early November to catch the winter diseases in their incubation stage.

The Ledgemont fairways are aerified twice a year. "In the fall, as they are sliced, they are overseeded to repair the ravages of summer play," explains Tony.

As to the amount of irrigation, Tony knows that "one inch of water per week" is a very arbitrary rule of thumb. He recommends relating the rate of pumping to the ability of the soil surface to absorb water, which is also altered by atmospheric conditions. "To maintain the optimum field capacity at Ledgemont, it takes ten hours of pumping at a rate of 800 gallons per minute."

This greens-mower is in operation six days a week. Bentgrass greens stay ⅛ inch tall. Even during the months when greens are not actively growing, a mower is used to keep the standard height.

Tony's solution for weed control is, "the best weed control is to grow turfgrass. We have used Dicamba and 2,4-D when needed. Now the dandelions and plantain are under control. Clover, chickweed, and knotweed seldom show up in a serious infestation."

With most tees large enough now to hold the grass under heavy traffic, the driving distances can also be varied with wind conditions and tournament needs. "Keeping Merion cut at one-half inch means that the rest of the turf care better be right," says Tony.

Monthly, except July and August, the tees receive a pound of N per 1,000 square feet during the golfing season. The 75% organic balanced fertilizer used on the fairways is also the workhorse on tees. The slow release and balance of nutrients assure a constant, steady source of the right kind of plant food.

Tees are verticut, aerified, and overseeded only in the fall. Irrigation depends on rainfall, and averages every third day. A preventative disease program is scheduled annually. The same materials are used on tees as on fairways.

Using the most efficient materials and practices on the tees and fairways programs more crew time for greens maintenance. Mowing six days a week, the bentgrass greens stay ⅛ inch high. They are aerified and topdressed twice a year, and spiked as needed.

Watering is scheduled daily, when the rainfall is not adequate. Since the water requirements vary with each green, the watering time prescribed for each green is based on the rate of absorption.

"Preventive programs are vital to keep greens free of disease and insect damage. Sod webworm, cutworm, chinch bug are the most serious culplits. Insecticides such as Sevin, Diazinon, and chlordane may be used as often as twice a month, and gives adequate control," asserts Tony.

"In season, fungicides such as Acti-dione ferrated and Thiram 75 are used every seven days to give broad-spectrum control. For winter disease control, cadmium chloride is applied twice in the fall, and mercuric chlorides are usually applied twice in mid-winter, with the sec-

(continued on page 56)

For More Details Circle (107) on Reply Card

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That, very simply stated, is the reason why your Jacobsen distributor offers a full line of turf-care equipment.

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He won't get you something kind-of-like what you need, either. He'll get exactly what you need. He can do it because he's backed by the most complete line of turf-care equipment there is.

For More Details Circle (101) on Reply Card

ways to make good turf look great.

And that "full line philosophy" is one of the big reasons your Jacobsen distributor handles Jacobsen. (Since he's an independent businessman, he can carry just about any line he darn well wants to. But having such a complete line to work with gives him more ways to help you maintain great-looking turf.)

So if you'd like to have a guy on your team who cares as much about turf as you do, get ahold of your Jacobsen distributor.

He not only knows your equipment needs inside and out, he can get you what's needed to help make good turf great. When all is said and done, would you really want it any other way?

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Perfectly balanced—easy to use. Lightweight (under 6 lbs.). Vibration free. Less operator fatigue. Long reach—cuts fast, clean. Full 3" cut. New insulated handle for heat protection.

c. ☐ New 360° Swivelhead
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Pruner

Full power on both cut and retract strokes. Powerful, sharp jaws cut cleanly, quickly. 2"-plus cut. No fatigue. No bruising or crushing. Seven models—up to 7' reach. New insulated handle.

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Fairways are mowed a minimum of four times a week. Mowers are kept busy in some areas of the course every day. Cutting height varies according to season, ⅞ inch in summer and ½ inch in fall.

TURF MANAGEMENT *(from page 52)*

ond coming after the January or early February "thaw." The rate for early fall is one ounce per 1,000 square feet and for mid winter, 3 ounces per 1,000 square feet.

Fertilization is equally important to the greens. They need a steady supply of balanced nutrients. In April and May, about three-quarters pound of N per 1,000 square feet is applied each month. This balanced fertilizer 20-5-10 is 50% organic with 25% granular "Nitroform" and 25% sludge. This banks some slow-release nitrogen in the soil. During June, July, and August, ¼ pound of N is applied every other week with one-half of the nitrogen in soluble form and the other half sludge.

For better color prior to a tournament the above treatment may be repeated after seven days. In September and October the balanced fertilizer with 50% organics is repeated at the rate of one pound of N per 1,000 square feet. This banks nutrients for the winter and early spring green up.

The budget is fixed at the figure required "to do the job." Payroll takes about 75 percent. Twelve percent is for all chemicals, fertilizers, and seed. Fertilizer is roughly one-third of this portion. The remaining 12 percent covers utilities, equipment, and other maintenance, and miscellaneous necessities.

The capial and annual investment in Ledgemont pays off for the area. Like all large turf areas, the golf course acts as an oxygen factory. The grass takes up the carbon dioxide and releases nitrogen. Sheltering a wide utility right-of-way, it offers more than the normal open spaces. And as already stated, its water management provides a water resource.

Quick to realize the public relations aspects, Tony comments, "Large tracts of land without concrete and housing, properly planted with trees and grass, are becoming more and more essential to our over-all ecology for water and air resources. The water table is getting lower and lower and the air is getting more and more polluted."

Whether campaigning to be councilman of North Providence, performing the role of the visiting instructor serving as an officer in a golf course superintendent association, speaking at an educational conference, serving in the armed services, or managing the Ledgemont course, Tony Caranci is the dedicated individual with the "considerable diversification" that he tells his students is necessary. He makes the job of golf superintendent challenging and rewarding. He is "truly one of the professional turfgrass managers and business executives" needed to handle the complex technology of today's golf courses.

Pesticide Act To Highlight Weed Science Convention

Details of the Federal Environmental Pesticide Control Act of 1972 will highlight the annual meeting of the Weed Science Society of America in Atlanta, February 6-8.

David P. Dominick, assistant administrator of the Environmental Protection Agency will provide complete review on this important new law that affects both the private applicator and the certified applicator. He will speak during the first day of the session, Monday, Feb. 6.

Also scheduled during the first day's meeting will be an opening address on "The Role of A Professional Society" by WSSA President R. P. Upchurch of Monsanto Chemical Co.; two talks covering the role of herbicides in a modern society; and a presentation by Under secretary of Agriculture J. Phil Campbell on "American Diet: The Shift From Bread and Potatoes to High Protein."

February 7 and 8, half-day meetings are scheduled to discuss a wide variety of weed control topics. Among the topics scheduled are two discussions on turf care, another session covering aquatic weed control and a presentation by Dr. P. L. Klingman of USDA on "Non-herbicide Weed Control." Included in that discussion will be control of weeds by insects, fish, flaming and several other possible methods for weed control without chemicals.

A ladies' day program during the meeting will include tours of attractions such as Underground Atlanta and special addresses on a variety of topics.

Anyone interested in weed science and control is invited to attend the session, according to Dr. Earl Rogers of the University of Florida, program chairman. Further details are available from Dr. Rogers at the Agronomy Dept., College of Agriculture, University of Florida, Gainesville, Fla., 32601. Details for local accommodations for the meeting are available from L. S. W. Hauser, Tifton Georgia Experiment Station, USDA, Tifton, Ga., 31794.

The three-day meeting will be held at Atlanta's Regency Hyatt House.

Crop Protection Chemicals Division Formed By Agrico

A crop protection chemicals division has been formed by Agrico Chemical Company.

It is estimated that in 1971 the value of crop protection chemicals consumed was $1,600,000,000 at grower price," said John F. Babbitt, president of Agrico." The value of fertilizer materials consumed totaled about $2,550,000,000. Thus the value of crop protection chemicals consumed in the relatively young industry were approximately 63% of the value of all fertilizer materials.

"Agrico is setting up this important and specialized division to provide our dealers and customers with their requirements for crop protection chemicals and associated technical services." Babbitt said.

Banvel X Pellets Registered By EPA

A Federal label for Banvel X-P pellets is now registered by the Environmental Protection Agency.

Manufactured by Velsicol Chemical Corporation, Banvel herbicides controls a broad spectrum of broadleaf weeds, as well as several brush species which were reistant to previously used brush killers.

Other Banvel formulations include granules, straight liquid and a broad range of mixtures of oil- and water-soluble formulations.

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For more than 115 years Mitts & Merrill has been making specialized machinery for industry. A major part of our business is equipment to reduce scrap and waste. This experience is incorporated into design features on our brush chippers that result in higher efficiency and longer, trouble-free service for you. Only Mitts & Merrill brush chippers offer features like these:

Staggered knife pattern for smoother cutting action. Mounted on an all-steel cylinder that, even without an external flywheel, is heaviest in the industry. Each cylinder revolution gives more cuts, produces smaller chips of uniform size. Self-adjusting knives are reversible; give twice the service between sharpening.

Optional torque converter isolates engine and transmission from cutting shock to minimize maintenance. Makes operation virtually fully automatic; increases operator productive time. Available on all models.

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• **Positive safety-lock pin** for greater operator safety • **Swing-away, folding feed chute** protects cutting chamber; allows instant access and increases maneuverability • **Heavy duty construction** includes coil spring, torsion-type suspension, and box tubular steel frame.

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These hard-to-kill woody plants and brush along a RECA transmission line near Itasca, Texas are an example of the performance of Tandex granules and tablets.

They Put The Hush On Brush

Results of tests on a Rural Electrification Cooperative Administration site near Itasca, Texas indicate that after 16 months difficult-to-control brush species have been 99 percent controlled.

Granule and tablet formulations of Tandex karbutilate herbicide were applied by hand in early June, 1970, on the surface of clay loam soil around the base of tree trunks and brush clumps. The granular material contained 10 percent active ingredient while the experimental tablet form contained 60 percent karbutilate.

Rates were one-half tablespoonful per inch of basal diameter for the Tandex granular. Tablets were applied at the rate of four per inch of basal diameter.

What were the woody species present at the site? Mosquite, elm, hackberry, persimmon, prickly ash, sumac, pecan, oaks and chittum. The tough ones that usually get away!

As early as May of 1971, researchers found complete defoliation of 95 percent of the treated species. The release properties of the compound are such that Tandex takes a moderately long time to completely kill the species treated. Thus, when the final evaluation was made last October 1972, only then could the test be labeled as 99 percent control.

Researchers indicate that the material may be unusually suited for woody species and brush control. Upon application, the compound is characterized by a high degree of vertical percolation (downward but not lateral movement in the ground) which minimizes effects on adjacent areas. This may be considered a distinct plus in areas where lateral movement would damage valuable vegetation adjacent to the area treated. Pill and pellet formulations are also of special interest because they simplify "pinpoint" application by hand and eliminate drifting or blowing of material during use.

— classifieds —

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: "Position Wanted" 10¢ per word, minimum $3.00. All other classifications 20¢ per word, minimum $4.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment. Boldface rule box: $25.00 per column inch.

HELP WANTED

GREAT OPPORTUNITY FOR THE MAN WHO LIKES TO BE HIS OWN BOSS!

National leader in tree service, operating from Maine to Florida, offers excellent opportunity in sales and management. Ability to work with public and personnel is important. Must be experienced in tree work or horticulture. Excellent starting salary, expenses and fringe benefits. Intensive training course and outstanding growth potential. Send resume of experience or educational background to:

WILLIAM ECKHARDT
BARTLETT TREE EXPERTS
2770 Summer Street, Stamford, Conn. 06305

POSITIONS OPEN for 2 qualified men on expanding turf farm. Experience in all phases of turf farm operation necessary for both positions and experience in sales and management required for one position. 90% of turf, muck grown, modern harvesting equipment used, considerable irrigation equipment used. Excellent future, top salary, transportation, paid hospitalization, etc. Write giving complete resume to Anthony L. Peca, Pres., Batavia Turf Farms, Inc., Box 662, Batavia, N.Y. 14020.

EXPANDING TREE SERVICE company in northeast—looking for aggressive and experienced salesman. Starting pay commensurate with education, experience, and ability. Commission also paid on profits earned. Company car furnished: pension plan; paid hospitalization, excellent future. Send resume (with current annual sales and earnings) to Box 133, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

TREE TRIMMER, Prince George's County, Maryland. Beginning salary $6,641 with annual increases to $8,913. Applicants must have had experience in shade tree services, including tieing various knots in rope to be used as safety saddle and aerial lifts. Good physical condition. Apply: Personnel Office, 14750 Main Street, Upper Marlboro, Maryland 20870 or call 301 627-4747.

LANDSCAPE FOREMAN. Prince George's County, Maryland. Beginning salary $8,056 with annual increases to $10,905. Applicants must have had considerable experience in landscaping with some supervisory experience. Apply: Personnel Office, 14750 Main Street, Upper Marlboro, Maryland 20870 or call 301 627-4747.

DISTRIBUTORS for D. J. Andrews, Inc. stump cutter teeth, pockets and bolts. Best wholesale and retail price in U.S.A. Add to this exclusive area, local advertising at our expense, etc., and you have our story. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230, or 716 436-1515.

SOD NURSERY MANAGER. Young, married man for 400 acre operation serving Chicago metropolitan area. Send resume. Box 91, Weeds Trees & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

POSITION WANTED

CONSULTANT-TREE SERVICE and landscaping. Specialist in: increasing sales, cost reduction, personnel management and training, also product development and promotion. Will travel. Contact H. Harvey, (Suburban Philadelphia). 215 Ki-3-7155.

SEEDS

SOD QUALITY MERION SEED for discriminating growers. Also Fylking, Delta, Park, Newport, Nugget and Pennstar bluegrasses as well as fine fescues. We will custom mix to your specifications. Michigan State Seed Company, Grand Ledge, Michigan 48837. Phone 517 627-2164.

MISCELLANEOUS

TREE APPRAISALS, SURVEYS, loss evaluations and expert consultation services. For names of members of the American Society of Consulting Arborists, Inc., throughout the country, contact: Executive Director ASCA, 12 Lakeview Ave., Milltown, New Jersey 08850.

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FULL LINE OF USED TREE equipment for sale. We accept trade-ins and buy used tree equipment. New service available for northern Ohio. We now rent skyworkers, tree spades, brush grinders, 84' National crane, stump grinders and wood splitters. Edwards Tree Service, 3190 Cooper Foster Park Road, Vermilion, Ohio 44089. Phone: 216 967-6750 or 933-6750.

RECONDITIONED brush chippers, sprayers, log splitters, stump routers, bucket trucks. Let us know your needs. Equipment Sales Company, 5620 Old Sunrise Highway, Massapequa, New York 11758. Phone 516 799-7619.

FOR SALE — Overstocked with 12" and 16" Brush chippers, powered by Ford Industrial engines. Save over $500.00 on each unit. Immediate free delivery within 300 miles of New York. Imperial 516 541-4868.

WANTED: Stump grinder, Vermeer 15" or larger, any condition. Smith Nursery, 1809 Washington Ave., Portland, Maine 04103.

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DOUBLE EDGE sod cutter blades. Will fit any Ryan sod cutter. Works like double edge razor blade. Cuts much more sod per blade. Made to bolt on both ways. $24.00 plus postage. New automatic sod loaders for direct loading to pallets, trucks or trailers. No workers needed on ground. Both products developed and designed by Hadfield. Write or call Glen Hadfield, 4643 Sherwood, Oxford, Michigan 48051. Phone 313 628-2000.

GARDEN CENTER and landscape business in southern Virginia near mountains, lakes, and fast-growing suburbs. A once-in-a-lifetime for family. Modern fiberglass greenhouses. Trucks, tractor, tools and equipment. All at a bargain. Reply to Box 94, Weeds Trees & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

VALLEY FORGE STONE CO., R3, Box 115, Fleetwood, Pa. 19522. Phone 215 944-7171 or evenings 779-7698. All type landscape stone — boulders, rough flagging, pebbles, building stone, etc. White and all colors. Please contact us for estimate.

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IDEAL 5-ACRE RANCH. Lake Conchas, New Mexico. $2,975. No down. No interest. $25/month. Vacation paradise. Money maker. Free brochure. Ranchos: Box 2003GY, Alameda, California 94501.

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LEARN AUTOMATIC IRRIGATION —Complete self-taught course and textbook on fundamentals. Design, operation, maintenance, installation, pipe, equipment. Latest developments in automatic turf and landscape irrigation. New Edition now only $49.50 postpaid. California add tax. Send check, order or request for free outline. Larson Company, P.O. Box 4453, Santa Barbara, Calif. 93103.

BUSINESS OPPORTUNITIES

WANT TO SELL arborists? Sell direct! Effective — economical. Zip-coded addresses on self adhesive labels only $75.00/thousand. Specialized categories $10.00/hundred. Product Development International, 200 Sylvan Ave., Rutledge, Pa. 19070.

trimmings

FACTS FROM OUR ENVIRONMENT is a new booklet that's chocked full of informal questions and answers. "What is the biggest hazards to water quality? Do farm fertilizers load our rivers with nitrate? What is the earth's insect population?" and 121 other questions are answered in this informative booklet. Published by the Potash Institute of North America, it is available in single or multiple copies. Twenty-five cents for single copies. Write to 1649 Tullie Circle NE, Atlanta, Ga. 30329.

FOREST PLANTING in the U.S. during the last fiscal year totalled 1,692,939 acres, up 93,000 acres from the year before. Leading states were Florida, Alabama, and Oregon.

JUGLONE is a chemical produced by oak and hickory trees that is reported to act as a repellant to the European elm bark beetle. Scientists at the University of Wisconsin are studying this chemical for the possibility of adding it to elm tissue to combat the beetle which carries Dutch Elm Disease. A water soluble derivative could be injected into vascular tissue or perhaps applied as a foliar spray.

THE COFFIN LID is all but closed on DDT. As is typical at funeral gatherings, good comments about the chemical's beneficial uses continue to float on the breeze. Off to one side the environmentalists are madly shoveling dirt into the grave. And as the cold January air rips through the cemetery of chemical heroes, mourners stop to contemplate on a world free of malaria, free of mosquitoes, gypsy moths and other crop and forest marauders. Perhaps this discarded victim of public opinion will now find rest.

SWITZERLAND via Bolens Division of FMC Corporation is the incentive to dealers who meet or surpass preestablished sales goals during the year. According to Don Birdsall, Bolens manager of advertising and sales promotion, the 8-day vacation for two will be taken in late summer of 1973.

LITTER BUGS are more costly than most taxpayers may think. It's been estimated that American dump more than 40 million tons of trash annually on our roads, beaches, parks and other public areas. If piled one foot high, that much litter would cover a highway between New York and San Francisco, or about 3,000 miles. During 1971, litter bugs cost more than $21.5 million to clean up the 752.2 million acres of Federal parks, forests and lands.

FEDERAL HIGHWAY ADMINISTRATION has begun a research effort to find ways to advise motorists of safe driving speeds during foggy weather conditions. A research study will be done by the Oregon State Highway Division under a 27-month, $262,609 contract. Although only three percent of all accidents occur during fog, these accidents are more likely to result in multiple vehicle collisions, says the FHA. A recent study showed that two-thirds of all accidents involving nine or more vehicles in California occurred during fog.

CARL ROSE has a nose for detecting gas. As a consulting arborist from New Jersey, Carl noted a condition on a London planetree in the town of Kearney in late August that looked suspiciously like a gas leak in the soil under the street. He notified the utility company who had no previous knowledge of a leak. Sure enough, eight days later, after testing for gas, they ripped up part of the street and replaced three house services and part of the street main.

THATCH defined by the Turfgrass and Crop Terminology Committee of the American Society of Agronomy is: "a tightly intermingled layer of living and dead stems, leaves and roots of grass, which develops between the layer of green vegetation and the soil surface. According to Dr. Robert W. Miller, Ohio State University, thatch appears to hinder plant growth in many ways. These include tying up mineral elements applied on the surface, plant response to fertilization, increased incidence of disease, decreased effectiveness of fungicides and insecticides, inhibited water penetration and an overall loss of turf vitality.

DON'T RANT—PLANT. That's what Daniel P. O'Connor of Anaheim, California thinks people should do instead of complaining about the environment going to pot. And he practices what he preaches. With the help of Ken D. Mueller, an expert on from the University of California, Riverside, O'Connor is teaching about 20 of his neighbors to grow better turfgrass, trees and bushes. He's now something of a "sub-agent" for Mueller when it comes to improving the environment. Kind of a "Green Industry Ambassador" to the public. Perhaps O'Connor's enthusiasm for green will start a revolution.

WHAT DO YOU DO WITH OLD UTILITY POLES? Give them to Bill Murphy, a foreman on the property of the Iowa-Illinois Gas and Electric Co. He not only has the professional touch of an arborist, but is gifted as a wood carver as well. In fact, he is the man who gave Green Rock, Ill. its only totem pole. He carved it from an assortment of tools, power saw and a good deal of Boy Scout imagination.

FACTS FROM OUR ENVIRONMENT is a new booklet that's chocked full of informal questions and answers. "What is the biggest hazards to water quality? Do farm fertilizers load our rivers with nitrate? What is the earth's insect population?" and 121 other questions are answered in this informative booklet. Published by the Potash Institute of North America, it is available in single or multiple copies. Twenty-five cents for single copies. Write to 1649 Tullie Circle NE, Atlanta, Ga. 30329.

FOREST PLANTING in the U.S. during the last fiscal year totalled 1,692,939 acres, up 93,000 acres from the year before. Leading states were Florida, Alabama, and Oregon.

Orthene Systemic Insecticide Under Production At Chevron

A new systemic insecticide that breaks down into harmless materials in the environment is being produced by the Ortho Division of Chevron Chemical Company.

Called Orthene, the insecticide is applied as a foliar spray that is rapidly taken up by the plant. Rain or water from sprinklers can't wash the material off the leaves once it has been allowed to dry.

Beneficial insects such as lady bugs and bees suffer little residual harm from Orthene. It is effective on such pests as aphids, leaf hoppers, webworms, tent caterpillars and gypsy moth.

The new material will be produced in a new manufacturing complex at Richmond, Calif. It is expected that the plant has the capacity to produce more than a million pounds of the material annually.

For more details on following page circle (183) on reply card

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A unique mowing tractor, designed to give more cutting capacity to one man and one machine.

The Parkmaster® with its 9 hand adjustable Spartan† mowers has an 18′ 6″ cutting width. Mows up to 12 acres an hour, saving time and manpower. Cuts mowing costs up to 50%.

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* U.S. Dwarf Variety Plant Patent No. 3186

Husky BARON cluster (left), common bluegrasses (right), mowed about one inch.

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Certified Jamestown RED FESCUE (A Chewings Type)

A great new winterseeding grass for golf greens is Jamestown Red Fescue, marketed exclusively by Lofts Pedigreed Seed, Inc. It is a top-rated, rapid germinating, Chewings-type fine fescue. Just right for overseeding Bermuda greens . . . hefty enough for convenient sowing and excellent vigor, small enough for economical high-population stands . . . Jamestown provides the rich, deep color and low, dense growth so ideal for putting surfaces. Highly recommended by Dr. Fred Ledeboer (pictured at right), of Clemson University's Horticulture Department.

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Here's a highly disease, drought, and mold resistant seed ideal for fairways alone or in combinations with other grasses. Exeter greens up earlier, stays green better in summer.

Certified Kingstown VELVET BENTGRASS

This is the only velvet bentgrass—for achieving the finest-textured golf greens—commercially available in the United States! Requires less maintenance. Over 8,000,000 seeds per pound.

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